2002 STANDARD DRAWINGS

http://www.udot.utah.gov/esd/esdmenu3.htm

Change Three, June 2, 2003

Memorandum UTAH DEPARTMENT OF TRANSPORTATION

DATE: June 2, 2003

TO: Region Directors
Project Engineers
Project Design Engineers
Project Managers
Consultants and Contractors

FROM: Barry Axelrod, CDT
Standards and Specifications

SUBJECT: Standard Drawing [U.S. Standard Unit (Inch-Pound Units)] Change 3 Dated June 2, 2003

A new index and updated drawings are attached. Please take the following action with respect to the attached pages.

REMOVE	**INSERT**
Index	Index - revised
Sheet 1B	Sheet 1B - revised
Sheet 1C	Sheet 1C - revised
AT 7	AT 7 - revised
CB 2	CB 2 - revised
CC 7	CC 7 - revised
CC 8	CC 8 - revised
N/A	CC 9A - new
N/A	CC 9B - new
EN 2	EN 2 - revised
GW 2	GW 2 - revised
SN 12B	SN 12B - revised

Electronic files for all Standards Drawings are available from the Standards and Specifications Web page on the Internet. The files are in Adobe pdf format.

If you have any questions or problems with the electronic files contact me at (801) 964-4570 or by email at baxelrod@utah.gov.

STANDARD DRAWINGS INDEX (Change Three, Dated 06/02/03)
UTAH DEPARTMENT OF TRANSPORTATION

U	NUMBER	TITLE	CURRENT DATE
		Advanced Traffic Management System (AT)	
	AT 1	Legend Sheet	07/03/02
	AT 2	Ramp Meter Details	07/03/02
	AT 3	Ramp Meter Sign Panel	07/03/02
	AT 4	Typical Ramp Meter Signal Head Mounting	07/03/02
	AT 5	Loop Installation	07/03/02
	AT 6	Conduit Details	07/03/02
	AT 7	Polymer-Concrete Junction Box Details	04/24/03
	AT 8	ATMS Cabinet w/120V Disconnect	07/03/02
	AT 9	ATMS Cab With Stepdown Transformer	07/03/02
	AT 10	Domed CCTV Details	07/03/02
	AT 11	CCTV Pole Detail	07/03/02
	AT 12	CCTV Pole Foundation For Dedicated CCTV Pole	07/03/02
	AT 13	120V VMS Cab Foundation Details	07/03/02
	AT 14	Weigh In Motion Piezo Detail	07/03/02
		Barriers (BA)	
	BA 1A	Precast Concrete Full Barrier Standard Section	12/19/02
	BA 1B	Precast Concrete Full Barrier Standard Section	12/19/02
	BA 2	Precast Concrete Half Barrier Standard Section	07/03/02
	BA 3	Cast In Place Constant Slope Barrier	12/19/02
	BA 4	Beam Guardrail Hardware	07/03/02
	BA 4A	Guardrail Transition	07/03/02
	BA 4B	Beam Guardrail Installation	12/19/02
	BA 4C	Beam Guardrail Anchor Type I	12/19/02
	BA 5	Traffic Control Cable	07/03/02
		Catch Basins and Cleanouts (CB)	
	CB 1	Standard Catch Basin	07/03/02

U	NUMBER	TITLE	CURRENT DATE
	CB 2	Curb Inlet Catch Basin	04/24/02
	CB 3	Standard Transition Concrete Lined Ditch To Pipe Or Diversion Box	07/03/02
	CB 4	Solid Cover For Standard Drawing DB 1 MS-18 Loading	07/03/02
	CB 5	Standard Screw Gate And Frame	07/03/02
	CB 6A	Standard Drop Inlet Details General Notes And Installation Detail	07/03/02
	CB 6B	Standard Catch Basin And Cleanout Box Drop Inlet Type "A" Details	07/03/02
	CB 6C	Standard Catch Basin And Cleanout Box Drop Inlet Type "B" Details	07/03/02
	CB 6D	Standard Catch Basin And Cleanout Box Drop Inlet Type "C" Details	07/03/02
	CB 6E	Standard Catch Basin And Cleanout Box Drop Inlet With Attached Apron Details	07/03/02
	CB 6F	Standard Catch Basin And Cleanout Box Drop Inlet With Attached Apron Details	07/03/02
	CB 6G	Standard Catch Basin And Cleanout Box Drop Inlet Type "D" Details	07/03/02
	CB 6H	Standard Catch Basin And Cleanout Box Drop Inlet Type "D" Tables	07/03/02
	CB 7	Standard Curb And Gutter Drop Inlet	07/03/02
	CB 8A	Double Catch Basin	07/03/02
	CB 8B	Double Catch Basin	07/03/02
	CB 9A	Standard Catch Basin and Cleanout Box Situation & Layout	07/03/02
	CB 9B	Standard Catch Basin and Cleanout Box Section Details	07/03/02
	CB 9C	Standard Catch Basin and Cleanout Box Schedule Of Installation 18" to 42" RCP 12" to 48" CMP	07/03/02
	CB 9D	Standard Catch Basin and Cleanout Box Schedule Of Installation 48" to 66" RCP 60" to 78" CMP	07/03/02
	CB 10A	Standard Catch Basin and Cleanout Box Situation & Layout	07/03/02
	CB 10B	Standard Catch Basin and Cleanout Box Section Details	07/03/02
	CB 10C	Standard Catch Basin and Cleanout Box Schedule Of Installation 42" to 60" RCP 48" to 72" CMP	07/03/02
		Crash Cushions (CC)	
	CC 1	Crash Cushion Markings	07/03/02

U	NUMBER	TITLE	CURRENT DATE
	CC 2	Crash Cushion Drainage Details Guideline A	07/03/02
	CC 3	Crash Cushion Drainage Details Guideline B	07/03/02
	CC 4	Details For Placement Crash Cushions Type A, B, & D	07/03/02
	CC 5	Grading And Placement Detail Crash Cushion Type C	07/03/02
	CC 6	Crash Cushion Type E Sand Barrel Details	12/19/02
	CC 7	Grading & Installation Details Crash Cushion Type F	04/24/03
	CC 8	Grading & Installation Details Crash Cushion Type G	04/24/03
	CC 9A	Grading & Installation Details Crash Cushion Type H	04/24/03
	CC 9B	Grading & Installation Details Crash Cushion Type H	04/24/03
		Diversion Boxes (DB)	
	DB 1A	Standard Diversion Box/Cover Plate/Grating For 18" DIA. or 24" DIA. Pipe	07/03/02
	DB 1B	Standard Diversion Box Hinged Lid Details For 18" DIA. or 24" DIA. Pipe	07/03/02
	DB 1C	Standard Diversion Box Bicycle - Safe Grating Details For 18" DIA. or 24" DIA. Pipe	07/03/02
	DB 1D	Standard Diversion Box Three Gate Box Sections For 18" DIA. or 24" DIA. Pipe	07/03/02
	DB 1E	Standard Diversion Box Three Gate Box Sections For 18" DIA. or 24" DIA. Pipe	07/03/02
	DB 1F	Standard Diversion Box Three Gate Box Sections For 18" DIA. or 24" DIA. Pipe	07/03/02
	DB 2A	Standard Diversion Box w/Interchangeable Walls, Bottom Slab, Walls and Apron Detail	07/03/02
	DB 2B	Standard Diversion Box w/Interchangeable Walls, Quantities Schedule	07/03/02
	DB 2C	Standard Diversion Box w/Interchangeable Walls, Hand Slide Gate Details	07/03/02
	DB 2D	Standard Diversion Box Type "G" Hand Slide Details	07/03/02
	DB 2E	Standard Diversion Box Hinged Lid (Solid Cover Plate) Type "A" Details Type I Plan	07/03/02
	DB 2F	Standard Diversion Box Hinged Lid (Solid Cover Plate) Type "A" Details Type II Plan	07/03/02
	DB 2G	Standard Diversion Box Hinged Lid Solid Cover Type "B" Details	07/03/02
	DB 2H	Standard Diversion Box Hinged Lid Solid Cover Type "B" & "C" Details	07/03/02

U	NUMBER	TITLE	CURRENT DATE
	DB 3A	Standard Diversion Box With Manhole Cover Situation And Layout	07/03/02
	DB 3B	Standard Diversion Box With Manhole Cover Up To 42" RCP and Up To 54" CMP	07/03/02
	DB 3C	Standard Diversion Box With Manhole Cover 48" - 72" RCP and 60" to 84" CMP	07/03/02
		Drainage (DG)	
	DG 1	Fill Height for Metal Pipe (Steel)	07/03/02
	DG 2	Fill Height for Metal Pipe (Aluminum)	07/03/02
	DG 3	Maximum Fill Height and End Sections For HDPE and PVC Pipes	12/19/02
	DG 4	Pipe Culverts Minimum Cover	12/19/02
	DG 5	Plastic Pipe, Metal Pipe or Pipe Arch Culvert Bedding	07/03/02
	DG 6	Precast Concrete Pipe Culvert	07/03/02
	DG 7	Gasketted Joints or Coupling Bands for C.M.P.	07/03/02
	DG 8	Metal Culvert End Sections	07/03/02
	DG 9	Miscellaneous Pipe Details	07/03/02
		Environmental Controls (EN)	
	EN 1	Temporary Erosion Control (Check Dams)	07/03/02
	EN 2	Temporary Erosion Control (Silt Fence)	04/24/03
	EN 3	Temporary Erosion Control (Slope Drain and Temporary Berm)	07/03/02
	EN 4	Temporary Erosion Control (Drop Inlet Barriers)	12/19/02
	EN 5	Temporary Erosion Control (Sediment Trap and Curb Inlet Barrier)	07/03/02
		Fence and Gates (FG)	
	FG 1A	Right-of-Way Fence and Gates (Wood Posts)	07/03/02
	FG 1B	Right-of-Way Fence and Gates (Wood Posts)	07/03/02
	FG 2A	Right-of-Way Fence and Gates (Metal Posts)	07/03/02
	FG 2B	Right-of-Way Fence and Gates (Metal Posts)	07/03/02
	FG 3	Swing Gates Type I for Gates Less Than 17'	07/03/02
	FG 4	Deer Gates	07/03/02
	FG 5	Swing Gates Type II for Gates Wider Than 17'	07/03/02

U	NUMBER	TITLE	CURRENT DATE
	FG 6	Chain Link Fence	07/03/02
		Grates, Frames, and Trash Racks (GF)	
	GF 1	Manhole Frame And Grated Cover	07/03/02
	GF 2	Manhole Frame And Solid Cover	07/03/02
	GF 3	Rectangle Grate & Frame	07/03/02
	GF 4	Directional Flow Grate & Frame	07/03/02
	GF 5	Solid Cover & Frame	07/03/02
	GF 6	Manhole Steps	07/03/02
	GF 7	Standard Screw Grate & Frame	07/03/02
	GF 8	2' x 2' Grate & Frame	07/03/02
	GF 9	28" x 24" Directional Flow and Frame	07/03/02
	GF 10	Standard Trash Racks 90E X-ing L	07/03/02
	GF 11	Standard Trash Racks	07/03/02
	GF 12	Standard Trash Racks	07/03/02
		General Road Work (GW)	
	GW 1	Raised Median and Plowable End Section	12/19/02
	GW 2	Concrete Curb and Gutter	04/24/03
	GW 3	Concrete Curb and Gutter Details	07/03/02
	GW 4	Concrete Driveways and Sidewalks	07/03/02
	GW 5	Pedestrian Access	02/27/03
	GW 6	Right-of-Way Marker	07/03/02
	GW 7	Newspaper and Mailbox Stop Layout	07/03/02
	GW 8	Newspaper and Mailbox Support Hardware	07/03/02
	GW 9	Delineation Hardware	07/03/02
	GW 10	Delineation Application	07/03/02
		Paving (PV)	
	PV 1	Joints for Highways with Concrete Traffic Lanes and Shoulders	07/03/02
	PV 2	Pavement/Approach Slab Details	12/19/02
	PV 3	Concrete Pavement Details for Urban and Interstate	07/03/02

U	NUMBER	TITLE	CURRENT DATE
	PV 4	Concrete Pavement Details for Urban and Interstate	07/03/02
	PV 5	Urban Concrete Pavement Details	07/03/02
	PV 6	Rumble Strips	07/03/02
	PV 7	Rumble Strips - Typical Application	07/03/02
		Signals (SL)	
	SL 1	Traffic Signals Mast Arm Pole and Luminaire Extension	07/03/02
	SL 2	Traffic Signals Mast Arm Detail 25' Thru 65'	07/03/02
	SL 3	Underground Service Pedestal Details	07/03/02
	SL 4	Traffic Signals Mast Arm Pole Foundation	07/03/02
	SL 5	Breakaway Post Mounted Traffic Signal Pole	07/03/02
	SL 6	Power Source Details	07/03/02
	SL 7	Span Wire Signal Pole Detail	07/03/02
	SL 8	Signal Head Details	07/03/02
	SL 9	Pedestrian Signal Assembly	07/03/02
	SL 10	Controller Base Details	07/03/02
	SL 11	Traffic Signals Loop Detector Detail	07/03/02
	SL 12	Junction Box Details	07/03/02
	SL 13	Traffic Counting Loop Detector Detail	12/19/02
	SL 14	Light Pole Breakaway Base	07/03/02
	SL 15	Luminaire Breakaway Base Detail	07/03/02
	SL 16	Single Transformer Substation Details	07/03/02
	SL 17	Light Pole Anchor Base	07/03/02
	SL 18	Light Pole Foundation Extension	07/03/02
		Signs (SN)	
	SN 1	Bridge Load Limit Signs	07/03/02
	SN 2	Flashing School Sign	12/19/02
	SN 3	Overhead School Flasher	07/03/02
	SN 4	Flashing Stop Sign	12/19/02
	SN 5	Typical Installation for Milepost Signs	12/19/02

U	NUMBER	TITLE	CURRENT DATE
	SN 6	Not Used	
	SN 7	Placement of Ground Mounted Signs	07/03/02
	SN 8	Ground Mounted Timber Sign Post (P1)	12/19/02
	SN 9	Ground Mounted Tubular Steel Sign Post (P2)	07/03/02
	SN 10	Ground Mounted Square Steel Sign Post (P3)	07/03/02
	SN 11	Slipbase Ground Mounted Tubular Steel Sign Post (P4)	07/03/02
	SN 12A	Ground Mounted Sign Installation Details	07/03/02
	SN 12B	Ground Mounted Sign Installation Details	04/24/03
	SN 12C	Ground Mounted Sign Installation Details	07/03/02
		Striping (ST)	
	ST 1	Object Markers "T" Intersection & Pavement Transition Guidance	12/19/02
	ST 2	Freeway Turn Around Markings	07/03/02
	ST 3	Typical Pavement Markings	07/03/02
	ST 4	Crosswalks, Parking and Intersection Approaches	07/03/02
	ST 5	Painted Median & Auxiliary Lane Details	07/03/02
	ST 6	Passing/Climbing Lanes Traffic Control	07/03/02
	ST 7	Pavement Markings & Signs at Railroad Crossing	12/19/02
	ST 8	Plowable Pavement Markers	07/03/02
		Structures and Walls (SW)	
	SW 1A	Welded End Guard Unit	07/03/02
	SW 1B	Precast Concrete Cattle Guard	07/03/02
	SW 2	Noise Wall Placement Area	07/03/02
	SW 3A	Precast Concrete Noise Wall 1 of 2	12/19/02
	SW 3B	Precast Concrete Noise Wall 2 of 2	12/19/02
	SW 4A	Precast Concrete Retaining/Noise Wall 1 of 2	12/19/02
	SW 4B	Precast Concrete Retaining/Noise Wall 2 of 2	07/03/02
		Traffic Control (TC)	
	TC 1A	Construction Zone Channelization Devices	07/03/02

U	NUMBER	TITLE	CURRENT DATE
	TC 1B	Construction Zone Signing	07/03/02
	TC 2A	Traffic Control General	07/03/02
	TC 2B	Traffic Control General	07/03/02
	TC 3	Traffic Control Project Limit Signing	07/03/02
	TC 4	Traffic Control Urban Intersections With Roadways Under 50 MPH	07/03/02
	TC 5	Traffic Control Urban Intersections With Roadways Under 50 MPH	07/03/02
	TC 6	Traffic Control Pedestrian Routing	07/03/02
	TC 7	Traffic Control Road Closed, Detour	07/03/02
	TC 8	Traffic Control Lane Closure	07/03/02
	TC 9	Traffic Control Multilane Closure	07/03/02
	TC 10	Traffic Control Expressway And Freeway Crossover/Turn-Around	07/03/02
	TC 11	Traffic Control Exit Ramp Gore	07/03/02
	TC 12	Traffic Control Entrance Ramp Gore	07/03/02
	TC 13	Traffic Control Shoulder-Haul Road	07/03/02
	TC 14	Traffic Control Flagging Operation	07/03/02
	TC 15	Traffic Control 2 Lane/ 2 Way Seal Coat With Cover Material	07/03/02
	TC 16	Traffic Control Pavement Marking	07/03/02

Listing of Revised Standard Drawings

Change Three

Revised April 24, 2003

AT 7	Polymer-Concrete Junction Box Details	04/24/2003
CB 2	Curb Inlet Catch Basin	04/24/2003
CC 7	Grading & Installation Details Crash Cushion Type F	04/24/2003
CC 8	Grading & Installation Details Crash Cushion Type G	04/24/2003
CC 9A	Grading & Installation Details Crash Cushion Type H	04/24/2003 (New)
CC 9B	Grading & Installation Details Crash Cushion Type H	04/24/2003 (New)
EN 2	Temporary Erosion Control (Silt Fence)	04/24/2003
GW 2	Concrete Curb and Gutter	04/24/2003
SN 12B	Ground Mounted Sign Installation Details	04/24/2003

UTAH DEPARTMENT OF TRANSPORTATION

STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION

DWG. NO.	DESCRIPTION	DATE
	Advanced Traffic Management System (AT)	
AT 1	LEGEND SHEET	07-03-02
AT 2	RAMP METER DETAILS	07-03-02
AT 3	RAMP METER SIGN PANEL	07-03-02
AT 4	TYPICAL RAMP METER SIGNAL HEAD MOUNTING	07-03-02
AT 5	LOOP INSTALLATION	07-03-02
AT 6	CONDUIT DETAILS	07-03-02
AT 7	POLYMER-CONCRETE JUNCTION BOX DETAILS	04-24-03
AT 8	ATMS CABINET W/120V DISCONNECT	07-03-02
AT 9	ATMS CAB WITH STEPDOWN TRANSFORMER	07-03-02
AT 10	DOMED CCTV DETAILS	07-03-02
AT 11	CCTV POLE DETAIL	07-03-02
AT 12	CCTV POLE FOUNDATION FOR DEDICATED CCTV POLE	07-03-02
AT 13	120V VMS CAB FOUNDATION DETAILS	07-03-02
AT 14	WEIGHT IN MOTION PIEZO DETAIL	07-03-02
	Barriers (BA)	
BA 1A	PRECAST CONCRETE FULL BARRIER STANDARD SECTION	12-19-02
BA 1B	PRECAST CONCRETE FULL BARRIER STANDARD SECTION	12-19-02
BA 2	PRECAST CONCRETE HALF BARRIER STANDARD SECTION	07-03-02
BA 3	CAST IN PLACE CONSTANT SLOPE BARRIER	12-19-02
BA 4	BEAM GUARDRAIL HARDWARE	07-03-02
BA 4A	GUARDRAIL TRANSITION	07-03-02
BA 4B	BEAM GUARDRAIL INSTALLATIONS	12-19-02
BA 4C	BEAM GUARDRAIL ANCHOR TYPE 1	12-19-02
BA 5	TRAFFIC CONTROL CABLE	07-03-02
	Catch Basins and Cleanouts (CB)	
CB 1	STANDARD CATCH BASIN	07-03-02
CB 2	CURB INLET CATCH BASIN	04-24-03
CB 3	STANDARD TRANSITION CONCRETE LINED DITCH TO PIPE OR DIVERSION BOX	07-03-02
CB 4	SOLID COVER FOR STD DWG DB 1 MS-18 LOADING	07-03-02
CB 5	STANDARD SCREW GATE AND FRAME	07-03-02
CB 6A	STANDARD DROP INLET DETAILS GENERAL NOTES AND INSTALLATION DETAIL	07-03-02
CB 6B	STANDARD CATCH BASIN AND CLEANOUT BOX DROP INLET TYPE "A" DETAIL	07-03-02
CB 6C	STANDARD CATCH BASIN AND CLEANOUT BOX DROP INLET TYPE "B" DETAILS	07-03-02
CB 6D	STANDARD CATCH BASIN AND CLEANOUT BOX DROP INLET TYPE "C" DETAILS	07-03-02
CB 6E	STANDARD CATCH BASIN AND CLEANOUT BOX DROP INLET WITH ATTACHED APRON DETAILS	07-03-02
CB 6F	STANDARD CATCH BASIN AND CLEANOUT BOX DROP INLET WITH ATTACHED APRON DETAILS	07-03-02
CB 6G	STANDARD CATCH BASIN AND CLEANOUT BOX DROP INLET TYPE "D" DETAILS	07-03-02
CB 6H	STANDARD CATCH BASIN AND CLEANOUT BOX DROP INLET TYPE "D" TABLES	07-03-02
CB 7	STANDARD CURB AND GUTTER DROP INLET	07-03-02
CB 8A	DOUBLE CATCH BASIN	07-03-02
CB 8B	DOUBLE CATCH BASIN	07-03-02

☒ MARKED BOXES INDICATE DRAWINGS APPLICABLE TO THIS PROJECT

DWG. NO.	DESCRIPTION	DATE
CB 9A	STANDARD CATCH BASIN AND CLEANOUT BOX SITUATION & LAYOUT	07-03-02
CB 9B	STANDARD CATCH BASIN AND CLEANOUT BOX SECTION DETAILS	07-03-02
CB 9C	STANDARD CATCH BASIN AND CLEANOUT BOX SCHEDULE OF INSTALLATION 18" TO 42" RCP 12" TO 48" CMP	07-03-02
CB 9D	STANDARD CATCH BASIN AND CLEANOUT BOX SCHEDULE OF INSTALLATION 48" TO 66" RCP 60" TO 78"CPM	07-03-02
CB 10A	STANDARD CATCH BASIN AND CLEANOUT BOX SITUATION & LAYOUT	07-03-02
CB 10B	STANDARD CATCH BASIN AND CLEANOUT BOX SECTION DETAILS	07-03-02
CB 10C	STANDARD CATCH BASIN AND CLEANOUT BOX SCHEDULE OF INSTALLATION 42" TO 60" RCP 48" TO 72" CMP	07-03-02
	Crash Cushions (CC)	
CC 1	CRASH CUSHION MARKINGS	07-03-02
CC 2	CRASH CUSHION DRAINAGE DETAILS GUIDELINE A	07-03-02
CC 3	CRASH CUSHION DRAINAGE DETAILS GUIDELINE B	07-03-02
CC 4	DETAIL FOR PLACEMENT CRASH CUSHIONS TYPE A, B & D	07-03-02
CC 5	GRADING & PLACEMENT DETAIL CRASH CUSHION TYPE C	07-03-02
CC 6	CRASH CUSHION TYPE E SAND BARREL DETAILS	12-19-02
CC 7	GRADING & INSTALLATION DETAILS CRASH CUSHION TYPE F,	04-24-03
CC 8	GRADING & INSTALLATION DETAILS CRASH CUSHION TYPE G	04-24-03
CC 9A	GRADING & INSTALLATION DETAILS CRASH CUSHION TYPE H	04-24-03
CC 9B	GRADING & INSTALLATION DETAILS CRASH CUSHION TYPE H	04-24-03
	Diversion Boxes (DB)	
DB 1A	STANDARD DIVERSION BOX/COVER PLATE/GRATING FOR 18"DIA. OR 24"DIA.PIPE	07-03-02
DB 1B	STANDARD DIVERSION BOX HINGED LID DETAIL FOR 18" DIA OR 24" DIA.PIPE	07-03-02
DB 1C	STANDARD DIVERSION BOX BICYCLE-SAFE GRATING DETAILS FOR 18"DIA. OR 24"DIA.PIPE	07-03-02
DB 1D	STANDARD DIVERSION BOX THREE GATE BOX SECTIONS FOR 18"DIA. OR 24"DIA.PIPE	07-03-02
DB 1E	STANDARD DIVERSION BOX THREE GATE BOX SECTIONS FOR 18"DIA. OR 24"DIA.PIPE	07-03-02
DB 1F	STANDARD DIVERSION BOX THREE GATE BOX SECTIONS FOR 18"DIA. OR 24"DIA.PIPE	07-03-02
DB 2A	STANDARD DIVERSION BOX W/INTERCHANGEABLE WALLS, BOTTOM SLAB, WALLS AND APRON DETAIL	07-03-02
DB 2B	STANDARD DIVERSION BOX W/INTERCHANGEABLE WALLS, QUANTITIES SCHEDULE	07-03-02
DB 2C	STANDARD DIVERSION BOX W/INTERCHANGEABLE WALLS, HAND SLIDE GATE DETAILS	07-03-02
DB 2D	STANDARD DIVERSION BOX TYPE "G" HAND SLIDE GATE DETAILS	07-03-02
DB 2E	STANDARD DIVERSION BOX HINGED LID (SOLID COVER PLATE) TYPE "A" DETAILS TYPE I PLAN	07-03-02
DB 2F	STANDARD DIVERSION BOX HINGED LID (SOLID COVER PLATE) TYPE "A" DETAILS TYPE II PLAN	07-03-02
DB 2G	STANDARD DIVERSION BOX HINGED LID SOLID COVER TYPE "B"DETAILS	07-03-02
DB 2H	STANDARD DIVERSION BOX HINGED LID SOLID COVER TYPE "B" & "C"DETAILS	07-03-02
DB 3A	STANDARD DIVERSION BOX WITH MANHOLE COVER SITUATION & LAYOUT	07-03-02
DB 3B	STANDARD DIVERSION BOX WITH MANHOLE COVER UP TO 42" RCP AND UP TO 54" CMP	07-03-02
DB 3C	STANDARD DIVERSION BOX WITH MANHOLE COVER 48"TO 72" RCP AND 60"TO 84" CMP	07-03-02

DWG. NO.	DESCRIPTION	DATE
	Drainage (DG)	
DG 1	FILL HEIGHT FOR METAL PIPE (STEEL)	07-03-02
DG 2	FILL HEIGHT FOR METAL PIPE (ALUMINUM)	07-03-02
DG 3	MAXIMUM FILL HEIGHT AND END SECTIONS FOR HDPE AND PVC PIPES	12-19-02
DG 4	PIPE CULVERTS MINIMUM COVER	12-19-02
DG 5	PLASTIC PIPE, METAL PIPE OR PIPE ARCH CULVERT BEDDING	07-03-02
DG 6	PRECAST CONCRETE PIPE CULVERT	07-03-02
DG 7	GASKETTED JOINTS OR COUPLINGS BANDS FOR C.M.P.	07-03-02
DG 8	METAL CULVERT END SECTION	07-03-02
DG 9	MISCELLANEOUS PIPE DETAILS	07-03-02
	Environmental Controls (EN)	
EN 1	TEMPORARY EROSION CONTROL (CHECK DAMS)	07-03-02
EN 2	TEMPORARY EROSION CONTROL (SILT FENCE)	04-24-03
EN 3	TEMPORARY EROSION CONTROL (SLOPE DRAIN AND TEMPORARY BERM)	07-03-02
EN 4	TEMPORARY EROSION CONTROL (DROP INLET BARRIERS)	12-19-02
EN 5	TEMPORARY EROSION CONTROL (SEDIMENT TRAP AND CURB INLET BARRIER)	07-03-02
	Fence and Gates (FG)	
FG 1A	RIGHT OF WAY FENCE AND GATES (WOOD POST)	07-03-02
FG 1B	RIGHT OF WAY FENCE AND GATES (WOOD POST)	07-03-03
FG 2A	RIGHT OF WAY FENCE AND GATES (METAL POST)	07-03-02
FG 2B	RIGHT OF WAY FENCE AND GATES (METAL POST)	07-03-02
FG 3	SWING GATES TYPE 1 FOR GATES LESS THAN 17'	07-03-02
FG 4	DEER GATES	07-03-02
FG 5	SWING GATES TYPE II FOR GATES WIDER THAN 17'	07-03-02
FG 6	CHAIN LINK FENCE	07-03-02

REVISIONS

NO.	DATE	APPR.	REMARKS
1	02/19/03	B.A.	CHANGE 1
2	04/24/03	B.A.	CHANGE 3

UTAH DEPARTMENT OF TRANSPORTATION
STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION
SALT LAKE CITY, UTAH

REVIEWED AND CHECKED — APR.24.2003 DATE

CHECKED AND APPROVAL — APR.24.2003 DATE

STANDARD ENGINEER

STANDARD DRAWING INDEX SHEET

STANDARD DRAWING TITLE

STD DWG
1-B

DGN File: N:\Eng\Standard_Drawings\Imperial\Approved\Change3Approved\Sheet1B.dgn

03-JUN-2003

UTAH DEPARTMENT OF TRANSPORTATION

STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION

DWG. NO.	DESCRIPTION	DATE
	Grates, Frames and Trash Racks (GF)	
GF 1	MANHOLE FRAME AND GRATED COVER	07-03-02
GF 2	MANHOLE FRAME AND SOLID COVER	07-03-02
GF 3	RECTANGULAR GRATE & FRAME	07-03-02
GF 4	DIRECTIONAL FLOW GRATE & FRAME	07-03-02
GF 5	SOLID COVER & FRAME	07-03-02
GF 6	MANHOLE STEPS	07-03-02
GF 7	STANDARD SCREW GATE & FRAME	07-03-02
GF 8	2' x 2' GATE AND FRAME	07-03-02
GF 9	28" x 24" DIRECTIONAL FLOW GRATE AND FRAME	07-03-02
GF 10	STANDARD TRASH RACKS 90° ANGLE X-ING L	07-03-02
GF 11	STANDARD TRASH RACKS	07-03-02
GF 12	STANDARD TRASH RACKS	07-03-02
	General Road Work (GW)	
GW 1	RAISED MEDIAN AND PLOWABLE END SECTION	12-19-02
GW 2	CONCRETE CURB AND GUTTER	04-24-03
GW 3	CONCRETE CURB AND GUTTER DETAILS	07-03-02
GW 4	CONCRETE DRIVEWAYS AND SIDEWALKS	07-03-02
GW 5	PEDESTRIAN ACCESS	02-27-03
GW 6	RIGHT OF WAY MARKER	07-03-02
GW 7	NEWSPAPER AND MAILBOX STOP LAYOUT	07-03-02
GW 8	NEWSPAPER AND MAILBOX SUPPORT HARDWARE	07-03-02
GW 9	DELINEATION HARDWARE	07-03-02
GW 10	DELINEATION APPLICATION	07-03-02
	Paving (PV)	
PV 1	JOINTS FOR HIGHWAYS WITH CONCRETE TRAFFIC LANES AND SHOULDERS	07-03-02
PV 2	PAVEMENT/APPROACH SLAB DETAILS	12-19-02
PV 3	CONCRETE PAVEMENT DETAILS FOR URBAN AND INTERSTATE	07-03-02
PV 4	CONCRETE PAVEMENT DETAILS FOR URBAN AND INTERSTATE	07-03-02
PV 5	URBAN CONCRETE PAVEMENT DETAILS	07-03-02
PV 6	RUMBLE STRIPS	07-03-02
PV 7	RUMBLE STRIPS -TYPICAL APPLICATION	07-03-02
	Signals (SL)	
SL 1	TRAFFIC SIGNALS MAST ARM POLE AND LUMINAIRE EXTENSION	07-03-02
SL 2	TRAFFIC SIGNALS MAST ARM DETAIL 25' THRU 65'	07-03-02
SL 3	UNDERGROUND SERVICE PEDESTAL DETAIL	07-03-02
SL 4	TRAFFIC SIGNALS MAST ARM POLE FOUNDATION	07-03-02
SL 5	BREAKAWAY POST MOUNTED TRAFFIC SIGNAL POLE	07-03-02
SL 6	POWER SOURCE DETAILS	07-03-02
SL 7	SPAN WIRE SIGNAL POLE DETAIL	07-03-02
SL 8	SIGNAL HEAD DETAILS	07-03-02
SL 9	PEDESTRIAN SIGNAL ASSEMBLY	07-03-02
SL 10	CONTROLLER BASE DETAIL	07-03-02
SL 11	TRAFFIC SIGNALS LOOP DETECTOR DETAIL	07-03-02
SL 12	JUNCTION BOX DETAILS	07-03-02
SL 13	TRAFFIC COUNTING LOOP DETECTOR DETAIL	12-19-02
SL 14	LIGHT POLE BREAKAWAY BASE	07-03-02
SL 15	LUMINARIE BREAKAWAY BASE DETAIL	07-03-02
SL 16	SINGLE TRANSFORMER SUBSTATION DETAILS	07-03-02
SL 17	LIGHT POLE ANCHOR BASE	07-03-02
SL 18	LIGHT POLE FOUNDATION EXTENSION	07-03-02
	Signs (SN)	
SN 1	BRIDGE LOAD LIMITS SIGNS	07-03-02
SN 2	FLASHING SCHOOL SIGN	12-19-02
SN 3	OVERHEAD SCHOOL FLASHER	07-03-02
SN 4	FLASHING STOP SIGN	12-19-02
SN 5	TYPICAL INSTALLATION FOR MILEPOST SIGNS	12-19-02
SN 6	NOT USED	07-03-02
SN 7	PLACEMENT OF GROUND MOUNTED SIGNS	07-03-02
SN 8	GROUND MOUNTED TIMBER SIGN POST (P1)	12-19-02
SN 9	GROUND MOUNTED TUBULAR STEEL SIGN POST (P2)	07-03-02
SN 10	GROUND MOUNTED SQUARE STEEL SIGN POST (P3)	07-03-02
SN 11	SLIPBASE GROUND MOUNTED TUBULAR STEEL SIGN POST (P-4)	07-03-02
SN 12A	GROUND MOUNTED SIGN INSTALLATION DETAILS	07-03-02
SN 12B	GROUND MOUNTED SIGN INSTALLATION DETAILS	04-24-03
SN 12C	GROUND MOUNTED SIGN INSTALLATION DETAILS	07-03-02
	Striping (ST)	
ST 1	OBJECT MARKERS "T" INTERSECTION & PAVEMENT TRANSITION GUIDANCE	12-19-02
ST 2	FREEWAY TURN AROUND MARKINGS	07-03-02
ST 3	TYPICAL PAVEMENT MARKINGS	07-03-02
ST 4	CROSSWALKS, PARKING AND INTERSECTION APPROACHES	07-03-02
ST 5	PAINTED MEDIAN & AUXILIARY LANE DETAILS	07-03-02
ST 6	PASSING/CLIMBING LANES TRAFFIC CONTROL	07-03-02
ST 7	PAVEMENT MARKINGS AND SIGNS AT RAILROAD CROSSING	12-19-02
ST 8	PLOWABLE PAVEMENT MARKERS	07-03-02
	Structures and Walls (SW)	
SW 1A	WELDED END GUARD UNIT	07-03-02
SW 1B	PRECAST CONCRETE CATTLE GUARD	07-03-02
SW 2	NOISE WALL PLACEMENT AREA	07-03-02
SW 3A	PRECAST CONCRETE NOISE WALL 1 OF 2	12-19-02
SW 3B	PRECAST CONCRETE NOISE WALL 2 0F 2	12-19-02
SW 4A	PRECAST CONCRETE RETAINING/NOISE WALL 1 OF 2	12-19-02
SW 4B	PRECAST CONCRETE RETAINING/NOISE WALL 2 OF 2	07-03-02
	Traffic Control (TC)	
TC 1A	CONSTRUCTION ZONE CHANNELIZATION DEVICES	07-03-02
TC 1B	CONSTRUCTION ZONE SIGNING	07-03-02
TC 2A	TRAFFIC CONTROL GENERAL	07-03-02
TC 2B	TRAFFIC CONTROL GENERAL	07-03-02
TC 3	TRAFFIC CONTROL PROJECT LIMIT SIGNING	07-03-02
TC 4	TRAFFIC CONTROL URBAN INTERSECTION WITH ROADWAYS UNDER 50 MPH	07-03-02
TC 5	TRAFFIC CONTROL URBAN INTERSECTION WITH ROADWAYS UNDER 50 MPH	07-03-02
TC 6	TRAFFIC CONTROL PEDESTRIAN ROUTING	07-03-02
TC 7	TRAFFIC CONTROL ROAD CLOSURE, DETOUR	07-03-02
TC 8	TRAFFIC CONTROL LANE CLOSURE	07-03-02
TC 9	TRAFFIC CONTROL MULTILANE CLOSURE	07-03-02
TC 10	TRAFFIC CONTROL EXPRESSWAY AND FREEWAY CROSSOVER/ TURN AROUND	07-03-02
TC 11	TRAFFIC CONTROL EXIT RAMP GORE	07-03-02
TC 12	TRAFFIC CONTROL ENTRANCE RAMP GORE	07-03-02
TC 13	TRAFFIC CONTROL SHOULDER-HAUL ROAD	07-03-02
TC 14	TRAFFIC CONTROL FLAGGING OPERATION	07-03-02
TC 15	TRAFFIC CONTROL 2 LANE / 2 WAY SEAL COAT WITH COVER MATERIAL	07-03-02
TC 16	TRAFFIC CONTROL PAVEMENT MARKING	07-03-02

☒ **MARKED BOXES INDICATE DRAWINGS APPLICABLE TO THIS PROJECT**

REVISIONS

NO.	DATE	APPR.	REMARKS
1	02/19/03	B.A.	CHANGE 1
2	03/24/03	B.A.	CHANGE 2
3	04/24/03	B.A.	CHANGE 3

UTAH DEPARTMENT OF TRANSPORTATION
STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION
SALT LAKE CITY, UTAH

REVIEWED AND CHECKED — APR.24,2003 DATE

CHECKED AND APPROVAL — APR.24,2003 DATE

STANDARD ENGINEER

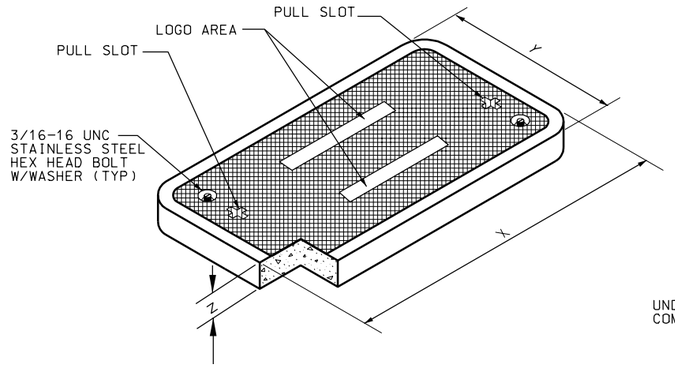
STANDARD DRAWING INDEX SHEET

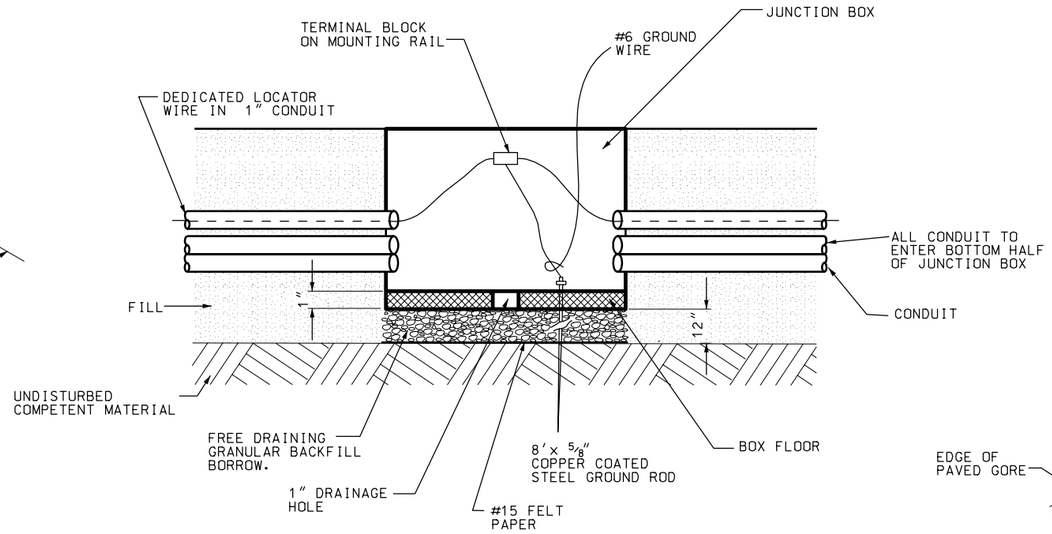
STANDARD DRAWING TITLE

STD DWG
1-C

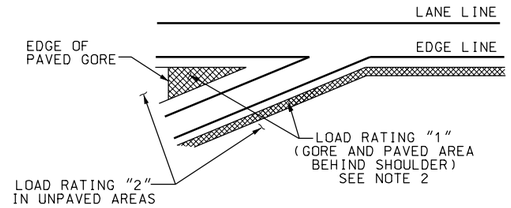
DGN File:N:\Esd\Standard Drawings\Imperial\Approved\Change2Approved\Sheet1C.dgn

02-JUN-2003

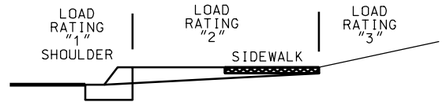




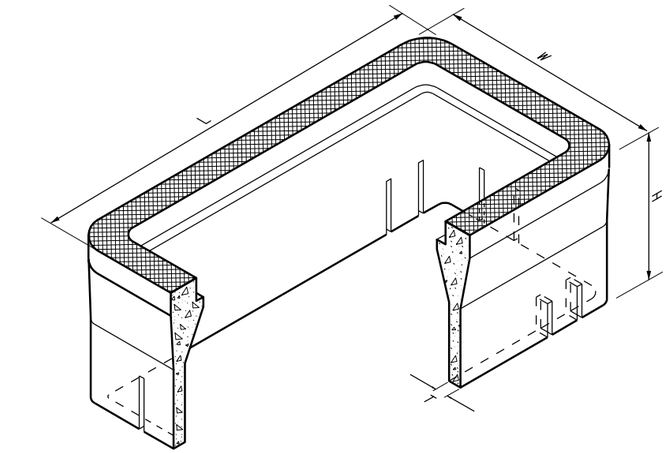
JUNCTION BOX CONDUIT
PENETRATION DETAIL



FREEWAY APPLICATION

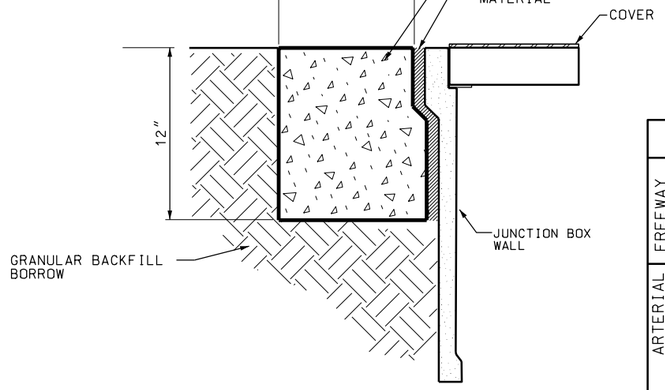


ARTERIAL STREET APPLICATION



BOX AND LID DIMENSIONS

BOX TYPE	"L" inch	"W" inch	"H" inch	"T" inch	"X" inch	"Y" inch	"Z" inch
I-PC	25	16	24	$1^{1}/_{2}$	$23^{1}/_{4}$	$13^{3}/_{4}$	2
II-PC	$37^{5}/_{8}$	26	24	$1^{1}/_{2}$	$35^{5}/_{8}$	24	3
III-PC	$49^{5}/_{8}$	$32^{1}/_{8}$	24	2	$47^{5}/_{8}$	$30^{1}/_{8}$	3



JUNCTION BOX CONCRETE COLLAR DETAIL

TABLE 1. FREEWAY AND ARTERIAL STREET APPLICATIONS

	APPLICATION	LOAD RATING 1	2	3
FREEWAY	INCIDENTAL TRAFFIC: PAVED GORE, PAVED AREA BEHIND SHOULDER	X		
FREEWAY	ALL OTHER AREAS		X	
ARTERIAL	PAVED SHOULDER OUT OF TRAFFIC	X		
ARTERIAL	NON-RAISED MEDIAN, INDUSTRIAL/COMMERCIAL DRIVEWAYS	X		
ARTERIAL	PARKWAY/SIDEWALK		X	
ARTERIAL	BEHIND SIDEWALK, NOT WHEEL LOADING ACCESSIBLE			X

TABLE 2. JUNCTION BOX LID STATIC VERTICAL LOAD RATING

LOAD RATING	COVER ENCLOSURE	DESIGN LOAD (lb)	TEST LOAD (lb)	TEST AREA (inch)
1	HS20	21000	45000	10 x 20
2	INCIDENTAL TRAFFIC (10K)	10000	22500	10 x 20
3	POLYMER CONCRETE	8000	12000	10 x 10

NOTES:
1. BOX TITLE NEEDS TO BE STAMPED INTO THE LID FROM THE FACTORY. (SEE SECTION 13554 ARTICLE 2.2H).
2. DO NOT PLACE JUNCTION BOXES IN THE TRAVELED-WAY OR ON FREEWAY SHOULDERS.

REVISIONS

NO.	DATE	APPR.	REMARKS
1	10/30/02	C.W.	CORRECTED CONDUIT SIZE 3/4" TO 1" IN THE JUNCTION BOX CONDUIT PENETRATION DETAIL
2	3/20/03	J.R.	LARGER TYPE II-PC BOX AND LOAD RATING LOCATIONS NO LONGER IN TRAVELED WAY. NEW NOTE 1. NOTE 2 ADDED.

UTAH DEPARTMENT OF TRANSPORTATION
STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION
SALT LAKE CITY, UTAH

RECOMMENDED FOR APPROVAL — APR. 24, 2003 DATE

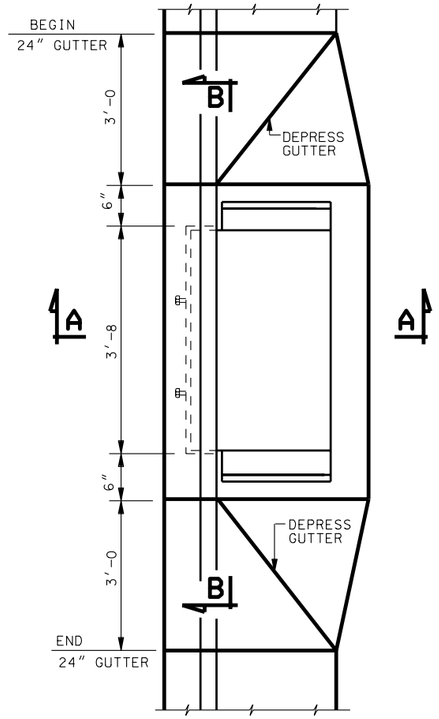
CHAIRMAN STANDARDS COMMITTEE APPROVED — APR. 24, 2003 DATE

DEPUTY DIRECTOR

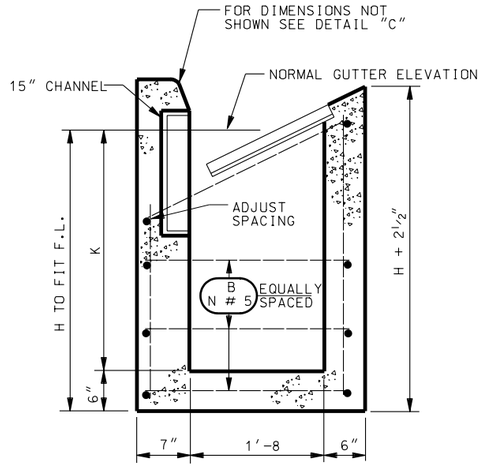
POLYMER-CONCRETE JUNCTION BOX DETAILS

STANDARD DRAWING TITLE

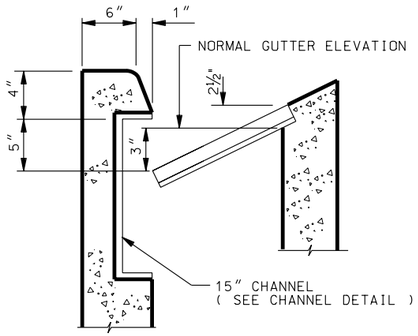
STD DWG
AT 7



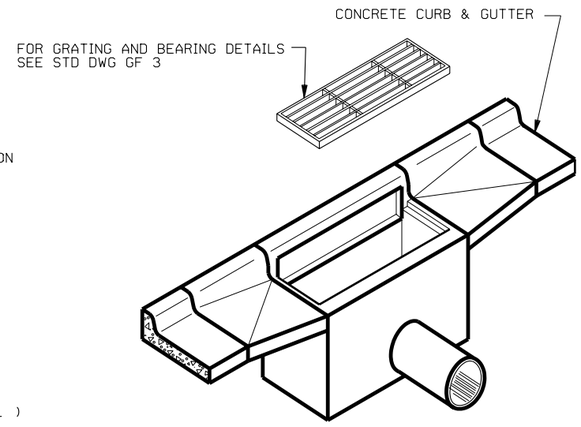
PLAN

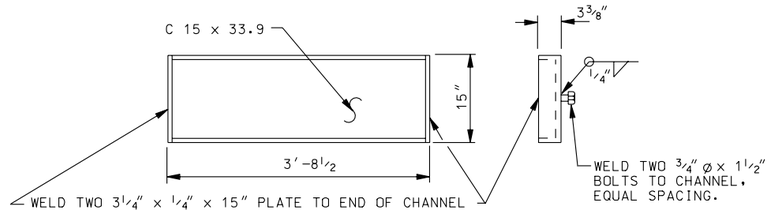


SECTION A-A

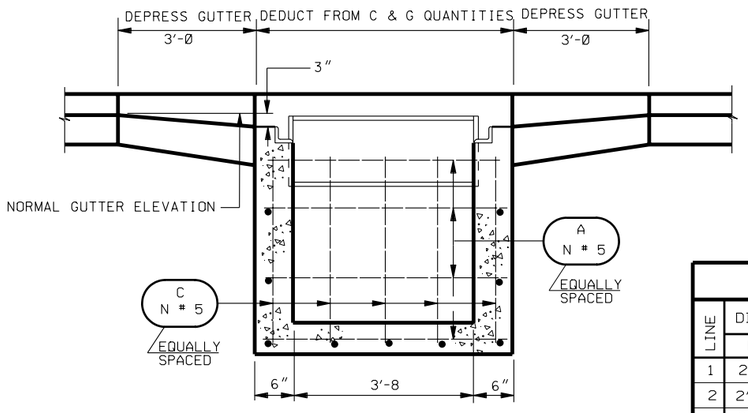


DETAIL "C"





CHANNEL DETAIL



SECTION B-B

TABLE "A"			
R.C.P.		C.M.P.	
DIA.	CU.YDS.	DIA.	CU.YDS.
12"	.024	12"	.015
15"	.036	15"	.023
		18"	.033

NOTE: QUANTITIES IN TABLE "A" ARE FOR PIPE THROUGH 6" WALL.

SCHEDULE OF INSTALLATION

LINE	DIMENSIONS		MAXIMUM PIPE DIA.		REINFORCING STEEL						REIN. STEEL	CONC.
					A		B		C			
	H	K	RCP	CMP	N	LENGTH	N	LENGTH	N	LENGTH	LBS.	CU. YDS
1	2'-0	1'-0	——	15"	7	4'-4	9	2'-5	12	1'-9	76.2	0.63
2	2'-6	2'-0	12"	18"	9	4'-4	11	2'-5	12	2'-3	96.6	0.75
3	3'-0	2'-6	15"	↕	9	4'-4	11	2'-5	12	2'-9	102.8	0.88
4	3'-6	3'-0	↕	↕	11	4'-4	13	2'-5	12	3'-3	123.2	1.00
5	4'-0	3'-6	↕	↕	11	4'-4	13	2'-5	12	3'-9	129.4	1.13
6	4'-6	4'-0	↕	↕	13	4'-4	15	2'-5	12	4'-3	149.8	1.25
7	5'-0	4'-6	15"	18"	13	4'-4	15	2'-5	12	4'-9	156.0	1.38

NOTES:

1. USE COATED DEFORMED BILLET REINFORCING STEEL BARS CONFORMING TO AASHTO M-284 OR M 111 AND M 31 GRADE 60 RESPECTIVELY.
2. USE STRUCTURAL STEEL CONFORMING TO AASHTO M 270 GRADE 36 EXCEPT WHERE NOTED OTHERWISE.
3. HOT-DIP GALVANIZE THE CHANNEL AND END PLATES AFTER FABRICATION IN ACCORDANCE WITH AASHTO DESIGNATION M 111
4. CHAMPHER ALL EXPOSED CONCRETE CORNERS ¾" EXCEPT WHERE NOTED OTHERWISE.
5. PROVIDE 2" CONCRETE COVER TO REINFORCING STEEL EXCEPT WHERE NOTED OTHERWISE.
6. USE CLASS AA(AE) CAST-IN-PLACE CONCRETE EXCEPT WHERE SPECIFIED OTHERWISE.
7. TYPE II CEMENT (LOW ALKALI) REQUIRED.
8. INCLUDE CONCRETE QUANTITIES FOR CURB AND GUTTER IN ROADWAY QUANTITIES
9. FOR LOCATION AND SIZE OF PIPE(S) SEE ROADWAY PLANS.
10. CUT AND/OR BEND REINFORCING STEEL AS NECESSARY TO CLEAR PIPES AND MAINTAIN 2" CLEARANCE.
11. DEDUCT CONCRETE DISPLACED BY PIPES (TABLE "A") FROM CONCRETE QUANTITIES GIVEN IN SCHEDULE OF INSTALLATION.
12. QUANTITIES IN TABLE "A" ARE FOR PIPE THROUGH 6" WALL THICKNESS.

DESIGN DATA

HS 20-44 OR INTERSTATE ALTERNATE MILITARY LOADING IN ACCORDANCE WITH CURRENT AASHTO AND INTERIM SPECIFICATIONS.

STRUCTURAL STEEL: Fs = 20,000 psi

STRUCTURAL CONCRETE:
Fc = 1400 psi
Fs = 24,000 psi
N = 8

QUANTITIES

SEE SCHEDULE OF INSTALLATION

REVISIONS

NO.	DATE	APPR.	REMARKS
1	04/23/03	F.W.	REVISED CURB CALLOUT TOP RIGHT HAND CORNER.

UTAH DEPARTMENT OF TRANSPORTATION
STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION
SALT LAKE CITY, UTAH

RECOMMENDED FOR APPROVAL — APR.24,2003 DATE

CHAIRMAN STANDARDS COMMITTEE APPROVED — APR.24,2004 DATE

DEPUTY DIRECTOR

CURB INLET CATCH BASIN

STD DWG
CB 2

CRASH CUSHION TYPE F

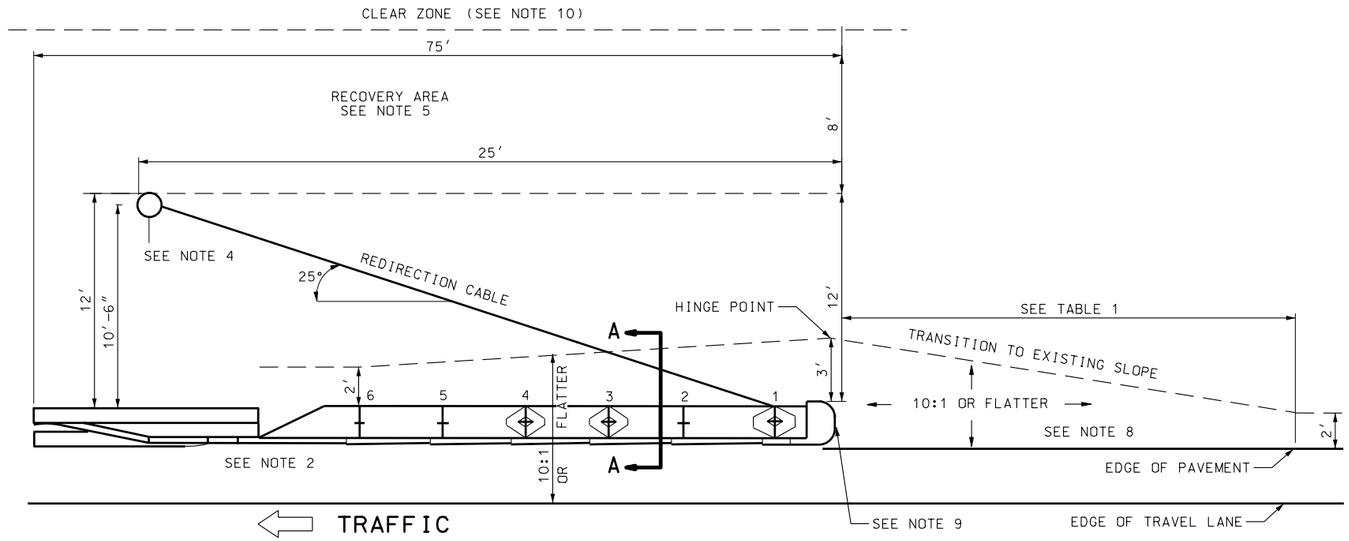
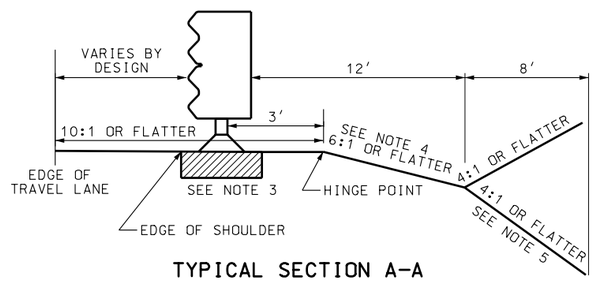


TABLE 1

SPEED MPH	TAPER	MINIMUM LENGTH FEET
LESS THAN 40	7:1	70
40 TO 55	10:1	100
60 TO 75	15:1	150



TYPICAL SECTION A-A

NOTES FOR CRASH CUSHION TYPE F

1. THE QUADTREND-350 IS MANUFACTURED BY ENERGY ABSORPTION SYSTEMS. USE MANUFACTURER'S AND UDOT'S REQUIREMENTS WHEN INSTALLING SYSTEM.
2. USE THE QUADTREND-350 WHEN A DIRECT ATTACHMENT TO A CONCRETE BARRIER OR BRIDGE PARAPET IS REQUIRED AND THERE IS LESS THAN 125 FEET OF LONGITUDINAL SPACE IN FRONT OF THE HAZARD.
3. INSTALL CONCRETE PAD AS PER MANUFACTURER'S REQUIREMENTS.
4. PLACE CABLE ANCHOR FOUNDATION IN SUCH A MANNER THAT THE REDIRECTING CABLE LAYS 6:1 OR FLATTER ON TOP OF THE GROUND, AND THE FOUNDATION WITH THE CABLE ANCHOR BRACKET, WHEN ATTACHED TO FOUNDATION, DOES NOT EXCEED 4 INCHES ABOVE GROUND LEVEL. DO NOT BURY THE REDIRECTION CABLE. REFERENCE STD DWG SN 6, BREAKAWAY POST STUB DETAIL.
5. USE A 4:1 OR FLATTER SLOPE IN RECOVERY AREA. WHEN USED WITH A CUT SLOPE A 6:1 OR FLATTER FILL AREA 12 FT. X 25 FT. IS REQUIRED PRIOR TO THE CUT SLOPE. INCLUDE THIS AREA AS PART OF THE RECOVERY AREA.
6. CLEAR THE RECOVERY AND APPROACH AREAS OF ANY FIXED OBJECTS.
7. ATTACH SAND CONTAINERS AT POSTS 1, 3 AND 4.
8. COMPLETE ALL GRADING REQUIREMENTS PRIOR TO SYSTEM INSTALLATION.
9. INSTALL REQUIRED MARKING AS PER STD DWG CC 1.
10. MAINTAIN AASHTO CLEAR ZONE FOR SPEEDS GREATER THAN 40 MPH. DEPENDING ON SYSTEM OFFSET, CLEAR ZONE MAY EXTEND OUTSIDE OF THE RECOVERY AREA.

REVISIONS

NO.	DATE	APPR.	REMARKS
1	10/16/02	F.W.	CRASH CUSHION TYPE G - CORRECTED STD DWG CALLOUT FROM BA 2B TO BA 4A IN NOTE 6.
2	04/03/03	G.S.	REVISED CLEAR ZONE REQUIREMENT, ADDED TABLE 1, ADDED NOTE 7.

UTAH DEPARTMENT OF TRANSPORTATION
STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION
SALT LAKE CITY, UTAH

RECOMMENDED FOR APPROVAL — APR.24,2003 DATE

CHAIRMAN STANDARDS COMMITTEE APPROVED — APR.24,2003 DATE

DEPUTY DIRECTOR

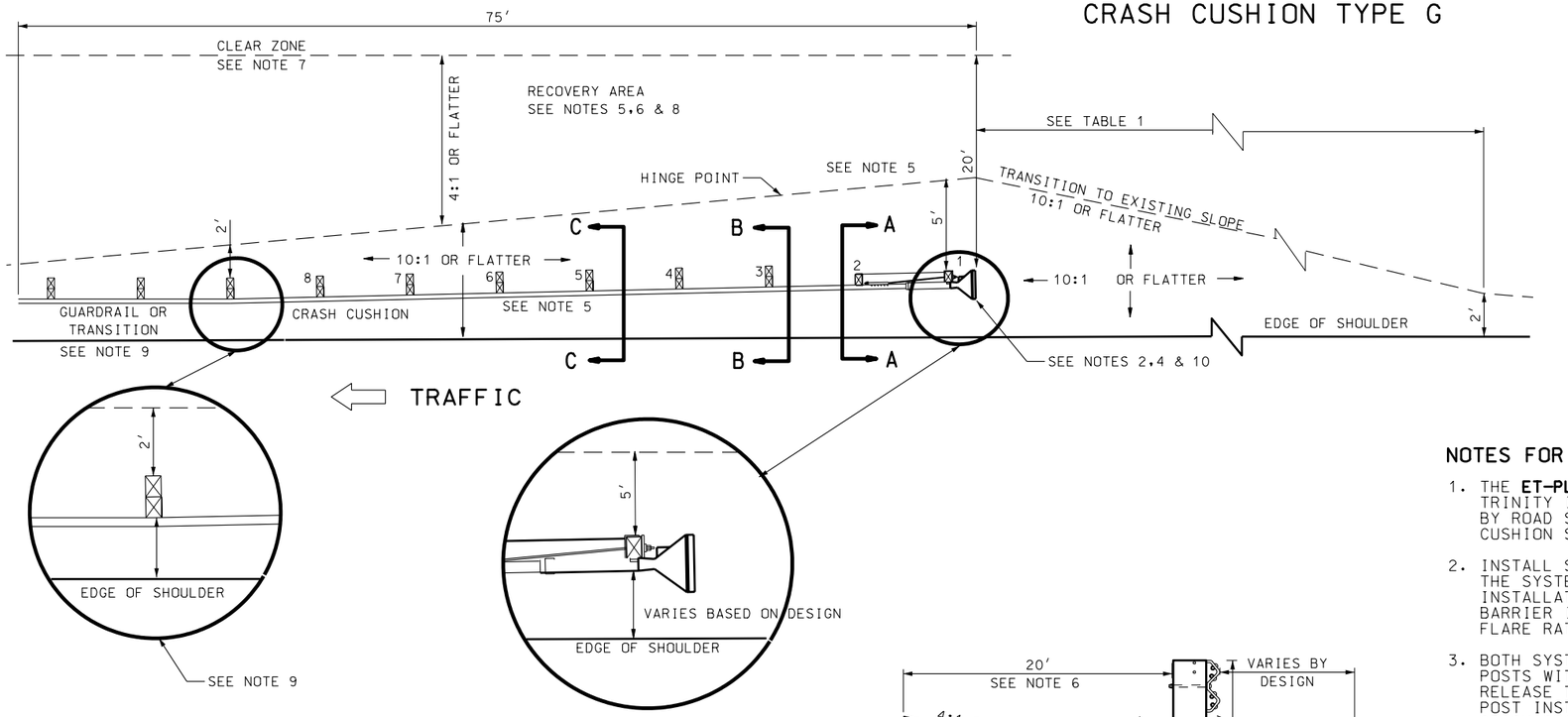
GRADING & INSTALLATION DETAILS CRASH CUSHION TYPE F

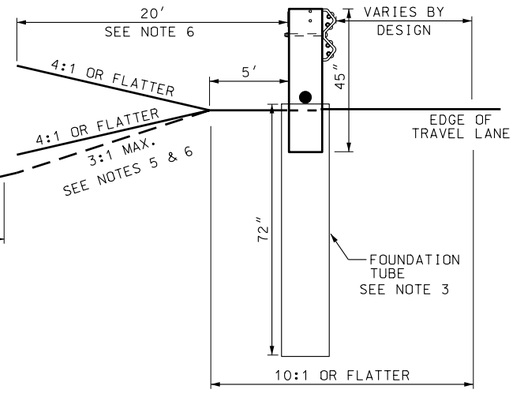
STANDARD DRAWING TITLE

STD DWG
CC 7

DGN File: N:\Esd\Standard Drawings\Imperial\Approved\Change2Approved\CC07.dgn
02-JUN-2003

CRASH CUSHION TYPE G

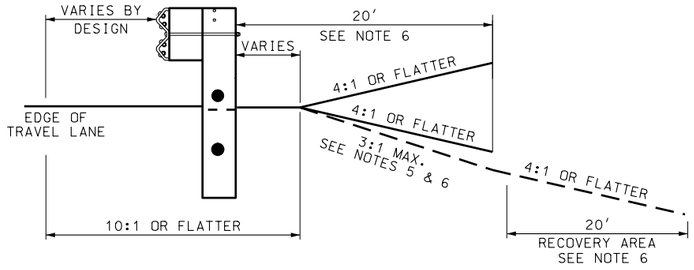




TYPICAL SECTION A–A

POSTS 1–2

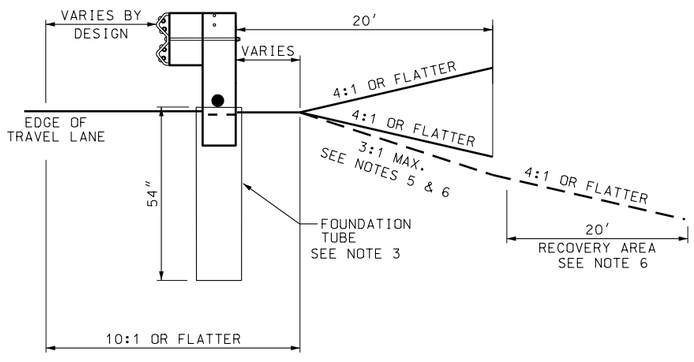
SEE NOTES 2 & 3



TYPICAL SECTION C–C

POSTS 5–8

SEE NOTE 3



TYPICAL SECTION B–B

POSTS 3–4

TABLE 1

SPEED MPH	TAPER	MINIMUM LENGTH FEET
LESS THAN 40	7:1	70
40 TO 55	10:1	100
60 TO 75	15:1	150

NOTES FOR END SECTION TYPE G

1. THE **ET-PLUS**, MANUFACTURED BY SYRO INC., TRINITY INDUSTRIES AND, THE **SKT-350**, MANUFACTURED BY ROAD SYSTEMS INC. ARE THE APPROVED CRASH CUSHION SYSTEMS.

2. INSTALL SYSTEMS AT A 50:1 FLARE FROM THE REAR OF THE SYSTEM, WHEN USED ON A TANGENT BARRIER INSTALLATION. WHEN SYSTEM IS USED WITH A FLARED BARRIER INSTALLATION, INSTALL SYSTEM AT THE SAME FLARE RATE AS THE BARRIER INSTALLATION.

3. BOTH SYSTEMS HAVE OPTIONS OF WOOD BREAKAWAY POSTS WITH FOUNDATION TUBES AND CONTROL RELEASE TERMINAL (**CRT**) POSTS, OR STEEL BREAKAWAY POST INSTALLATIONS. REFER TO THE GUIDELINES FOR CRASH CUSHIONS FOR ACCEPTABLE SYSTEM REQUIREMENTS. USE ONLY THE MANUFACTURER'S SPECIFIED STEEL BREAKAWAY POSTS WITH THE SUPPLIED SYSTEM. SYSTEMS USE A 72 INCH FOUNDATION TUBE AT POSTS 1 AND 2 AND A 54 INCH FOUNDATION TUBE AT POSTS 3 AND 4. POST 1 THROUGH 4 ARE SHORTENED BREAKAWAY POSTS AS SUPPLIED BY THE MANUFACTURER. THE TOP OF THE FOUNDATION TUBE IS NO GREATER THAN 4 INCHES ABOVE GROUND LINE.
   WHEN SYSTEM IS INSTALLED WITH **CRT** POSTS AT POSTS 5,6,7 AND 8 THE BOTTOM OF THE TOP HOLE IS AT GROUND LEVEL. WHEN INSTALLED WITH STEEL BREAKAWAY POSTS AT 5,6,7 AND 8, THE HINGE POINT OF THE POST IS NOT PLACE BELOW THE GROUND LINE OR HIGHER THAN 1 INCH ABOVE GROUND LINE.

4. **ET-PLUS:** DO NOT ATTACH RAIL AT POSTS 1 AND 5 WITH A POST BOLT. **SKT-350:** DO NOT ATTACH RAIL AT POST 1 WITH A POST BOLT.

5. COMPLETE SLOPE GRADING REQUIREMENTS PRIOR TO INSTALLATION. A SLOPE OF 10:1 TO THE RAIL ELEMENT FACE, APPROACH AREA AND DIRECTLY BEHIND THE SYSTEM IS REQUIRED. NO SLOPES GREATER THAN 4:1 TO THE EXISTING SLOPE AT THE HINGE POINTS BEHIND THE SYSTEM AND THE APPROACH AREA TRANSITION.

6. USE A 4:1 OR FLATTER FILL SLOPE IN RECOVERY AREA, IF IMPRACTICAL, USE A MAXIMUM 3:1 FILL SLOPE AND ESTABLISH A RECOVERY AREA AT THE TOE OF THE 3:1 FILL SLOPE. WHEN USED WITH A CUT SLOPE, A 4:1 OR FLATTER CUT IS REQUIRED IN THE RECOVERY AREA.

7. RECOVER AREA 20 FEET X 75 FEET MINIMUM. MAY NEED TO BE GREATER TO MEET AASHTO CLEAR ZONE REQUIREMENTS FROM THE EDGE OF TRAVEL LANE.

8. CLEAR RECOVERY AND APPROACH AREAS OF ANY FIXED OBJECTS.

9. USE GUARDRAIL TRANSITION, STD DWG BA 4A, WHEN ATTACHING SYSTEM TO CONCRETE BARRIER OR BRIDGE PARAPET.

10. INSTALL REQUIRED MARKINGS AS PER STD DWG CC 1.

11. REFER TO THE GUIDELINES FOR CRASH CUSHIONS FOR SPECIFIC SYSTEM INFORMATION.

REVISIONS

NO.	DATE	APPR.	REMARKS
1	10/16/02	F.W.	CRASH CUSHION TYPE G - CORRECTED STD DWG CALLOUT FROM BA 2B TO BA 4A IN NOTE 6.
2	01/28/03	G.S.	REMOVE CRASH CUSHION TYPE F, REWROTE ALL NOTES. ADDED TYPICAL SECTION B-B AND ADDED TABLE 1

UTAH DEPARTMENT OF TRANSPORTATION
STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION
SALT LAKE CITY, UTAH

RECOMMENDED FOR APPROVAL — APR.24,2003 DATE

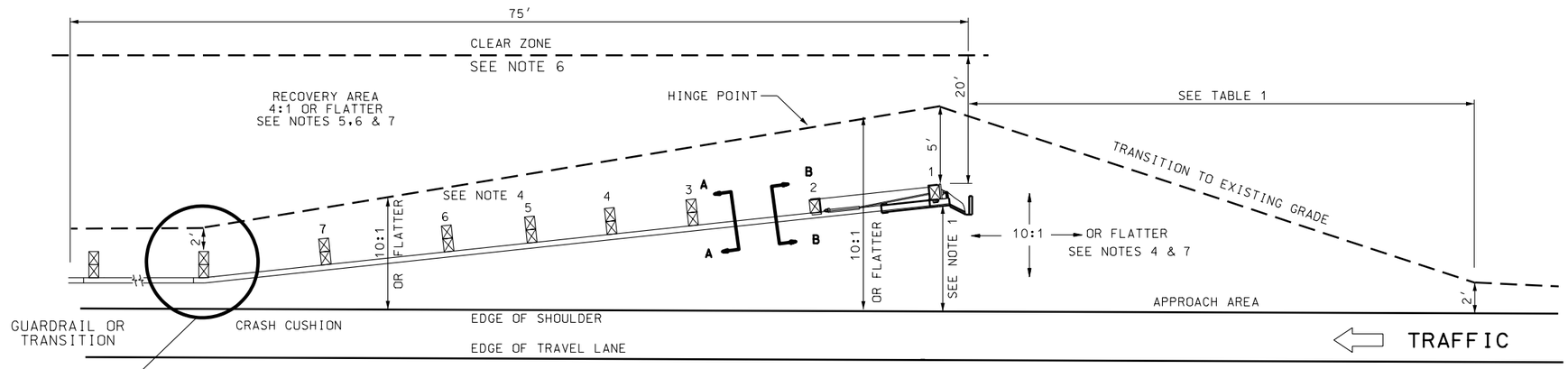
CHAIRMAN STANDARDS COMMITTEE APPROVED — APR.24,2003 DATE

DEPUTY DIRECTOR

GRADING & INSTALLATION DETAILS CRASH CUSHION TYPE G

STANDARD DRAWING TITLE

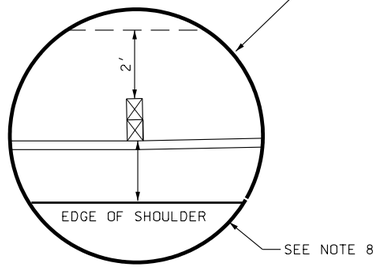
STD DWG
CC 8

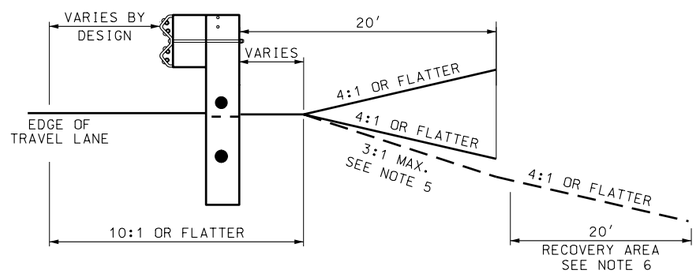


FLEAT - 350 / SRT-350/HBA

WOOD POST
OPTION SHOWN
SEE NOTE 2

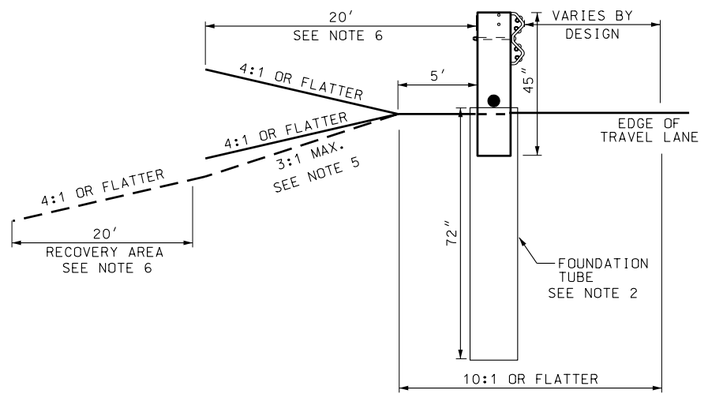
SEE NOTE 3 & 8





TYPICAL SECTION A-A

POST 3-8



TYPICAL SECTION B-B

POST 1-2

SEE NOTES 2 & 3

TABLE 1

SPEED MPH	**TAPER**	**MINIMUM LENGTH** FEET
LESS THAN 40	7:1	70
40 TO 55	10:1	100
60 TO 75	15:1	150

NOTES FOR END SECTION TYPE H

1. THE **FLEAT-350**, MANUFACTURED BY ROAD SYSTEMS, INC. AND THE **SRT-350/HBA**, MANUFACTURED BY SYRO INC., TRINITY INDUSTRIES. BOTH SYSTEMS INCORPORATE A STRAIGHT LINE FLARE. INSTALL SYSTEMS WITH A 4 FOOT OFFSET WHEN INSTALLED WITH A TANGENT BARRIER INSTALLATION. WHEN USING A FLARED BARRIER INSTALLATION INSTALL AT THE SAME FLARE RATE AS THE BARRIER.

2. **FLEAT-350** USES WOOD CONTROL RELEASE TERMINAL (**CRT**) POSTS AND WOOD BLOCKS, OR STEEL BREAKAWAY POSTS WITH ROUTED WOOD BLOCKS OR COMPOSITE BLOCKS. SYSTEM USES FOUNDATION TUBES AT POSTS 1 AND 2 FOR BOTH APPLICATIONS. THE TOP OF FOUNDATION TUBE IS NO GREATER THAN 4 INCHES ABOVE GROUND LINE. WHEN SYSTEM IS INSTALLED USING CRT POSTS, THE BOTTOM OF TOP HOLE IS AT GROUND LEVEL. WHEN SYSTEM IS INSTALLED USING STEEL BREAKAWAY POSTS, USE ONLY THE MANUFACTURER'S SPECIFIED STEEL BREAKAWAY POSTS AND THE BREAKAWAY JOINT IS PLACED 1 INCH ABOVE GROUND LINE.

3. **SRT-350/HBA** USES STEEL HINGED BREAKAWAY POSTS AT POSTS 1 AND 2 AND STANDARD **CRT** POSTS AT POSTS 3 THROUGH 6. USE ONLY THE MANUFACTURER'S SPECIFIED STEEL BREAKAWAY POSTS. THE BREAKAWAY JOINTS ARE PLACED AT GROUND LINE. THE BOTTOM OF THE TOP HOLE OF THE **CRT** POSTS ARE PLACED AT GROUND LEVEL. THE LAST POST OF THE GUARDRAIL INSTALLATION, WHEN THIS SYSTEM IS USED, IS REQUIRED TO BE A CRT POST AND IS NOT PART OF THIS SYSTEM. THIS SYSTEM CANNOT BE USED WITH A TRANSITION ELEMENT STD DWG BA 4A, EXCEPT AS SPECIFIED IN NOTE 8.

4. COMPLETE SLOPE GRADING REQUIREMENTS PRIOR TO INSTALLATION. A SLOPE OF 10:1 TO THE RAIL ELEMENT FACE, APPROACH AREA AND DIRECTLY BEHIND THE SYSTEM IS REQUIRED. NO SLOPES GREATER THAN 4:1 TO THE EXISTING SLOPE AT THE HINGE POINTS BEHIND THE SYSTEM AND THE APPROACH AREA TRANSITION.

5. USE A 4:1 OR FLATTER FILL SLOPE IN RECOVERY AREA, IF IMPRACTICAL, USE A MAXIMUM 3:1 FILL SLOPE AND ESTABLISH A RECOVERY AREA AT THE TOE OF THE 3:1 FILL SLOPE. WHEN USED WITH A CUT SLOPE, A 4:1 OR FLATTER CUT IS REQUIRED IN THE RECOVERY AREA.

6. RECOVERY AREA 20 FEET X 75 FEET MINIMUM. MAY NEED TO BE GREATER TO MEET AASHTO CLEAR ZONE REQUIREMENTS FROM THE EDGE OF TRAVEL LANE.

7. CLEAR RECOVERY AND APPROACH AREAS OF ANY FIXED OBJECTS.

8. USE GUARDRAIL TRANSITION, STD DWG BA 4A, WHEN ATTACHING THE **FLEAT-350** SYSTEM TO CONCRETE BARRIER OR BRIDGE PARAPET. THE **SRT-350/HBA** CANNOT BE DIRECTLY ATTACHED TO THE TRANSITION ELEMENT. AN ADDITIONAL $12\frac{1}{2}$ FOOT SECTION OF STANDARD GUARDRAIL WITH A **CRT** POST AT THE ATTACHMENT POST IS REQUIRED.

9. INSTALL REQUIRED MARKINGS AS PER STD DWG CC 1.

10. REFER TO THE GUIDELINES FOR CRASH CUSHIONS FOR SPECIFIC SYSTEM INFORMATION.

REVISIONS

NO.	DATE	APPR.	REMARKS
1	01/29/03	G.S.	NEW DRAWING

UTAH DEPARTMENT OF TRANSPORTATION
STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION
SALT LAKE CITY, UTAH

RECOMMENDED FOR APPROVAL — APR.24.2003 DATE

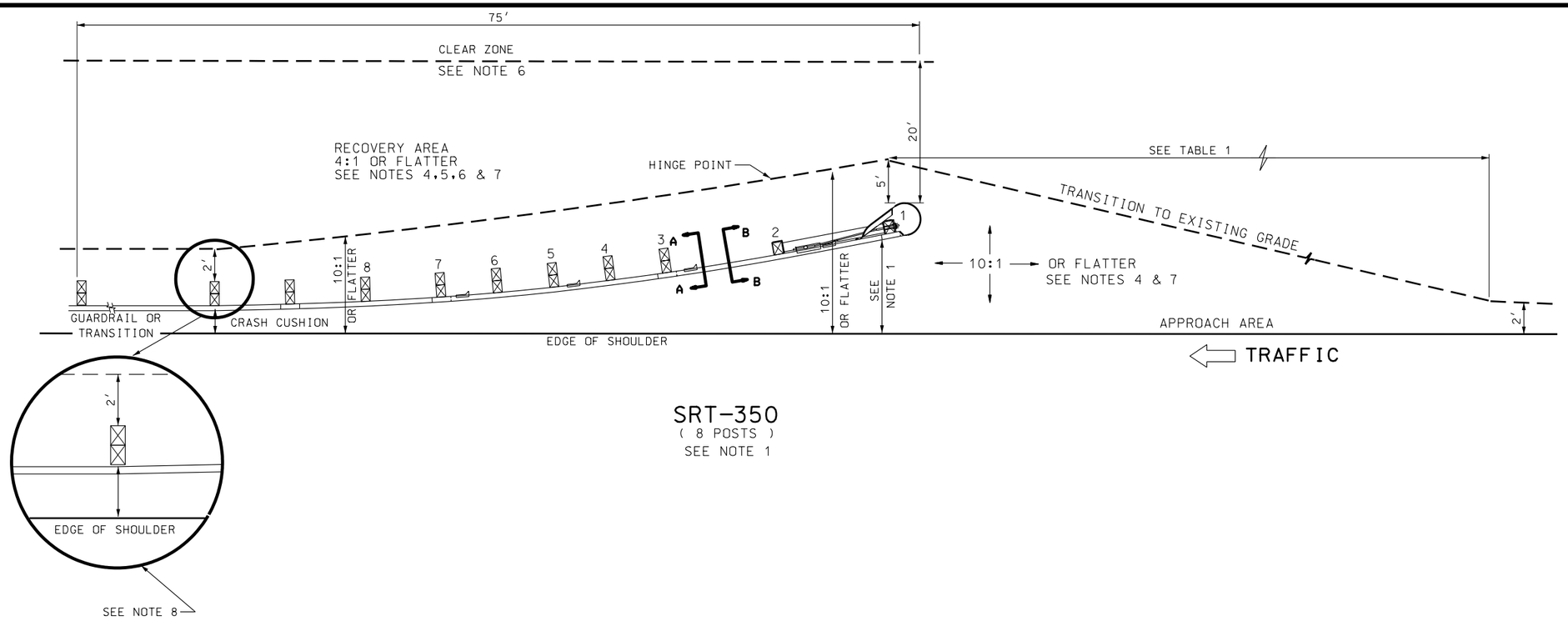
CHAIRMAN STANDARDS COMMITTEE APPROVED — APR.24.2003 DATE

DEPUTY DIRECTOR

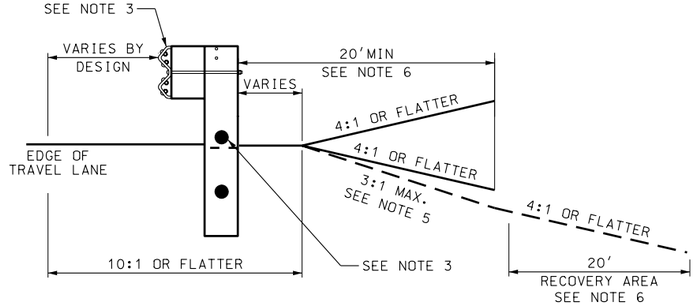
GRADING & INSTALLATION DETAILS CRASH CUSHION TYPE H

STANDARD DRAWING TITLE

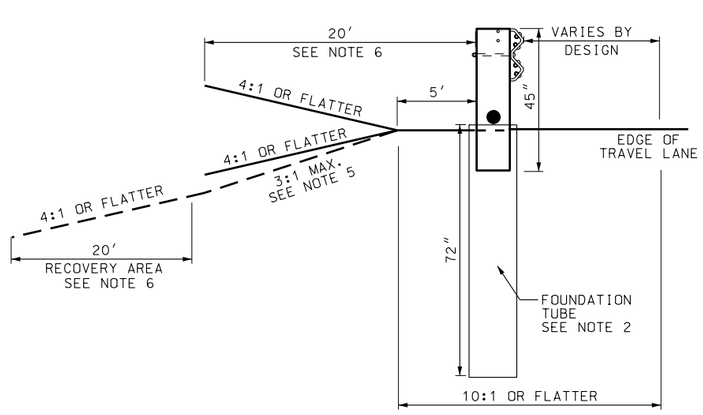
STD DWG
CC 9A



SRT-350
(8 POSTS)
SEE NOTE 1



TYPICAL SECTION A-A
POSTS 3-8



TYPICAL SECTION B-B
POSTS 1-2

TABLE 1

SPEED MPH	TAPER	MINIMUM LENGTH FEET
LESS THAN 40	7:1	70
40 TO 55	10:1	100
60 TO 75	15:1	150

NOTES FOR END SECTION TYPE H

1. THE **SRT-350** (8 POST SYSTEM), MANUFACTURED BY SYRO INC.,TRINITY INDUSTRIES. THE **SRT-350** INCORPORATES A PARABOLIC FLARE. INSTALL THIS SYSTEM USING A 4 FOOT OFFSET, FOLLOWING THE MANUFACTURER'S INSTALLATION INSTRUCTIONS. SYSTEM CAN BE USED WITH TANGENT OR FLARED BARRIER INSTALLATIONS.
2. USE FOUNDATION TUBES, 72 INCHES LONG, AND SHORTEN BREAKAWAY POSTS AT POST 1 AND 2. THE TOP OF FOUNDATION TUBE IS NO GREATER THEN 4 INCHES ABOVE GROUND LEVEL.
3. SYSTEM USES WOOD CONTROL RELEASE TERMINAL (**CRT**) POSTS AT POSTS 3 THROUGH 8 WITH WOOD BLOCKS AND SLOTTED RAIL ELEMENTS. PLACE THE BOTTOM OF THE TOP HOLE OF THE **CRT** POST AT GROUND LEVEL. RAIL ELEMENT IS NOT ATTACHED AT POSTS 7 AND 8.
4. COMPLETE SLOPE GRADING REQUIREMENTS PRIOR TO INSTALLATION. A SLOPE OF 10:1 TO THE RAIL ELEMENT FACE, APPROACH AREA AND DIRECTLY BEHIND THE SYSTEM IS REQUIRED. NO SLOPES GREATER THAN 4:1 TO THE EXISTING SLOPE AT THE HINGE POINTS BEHIND THE SYSTEM AND THE APPROACH AREA TRANSITION.
5. USE A 4:1 OR FLATTER FILL SLOPE IN RECOVERY AREA, IF IMPRACTICAL, USE A MAXIMUM 3:1 FILL SLOPE AND ESTABLISH A RECOVERY AREA AT THE TOE OF THE 3:1 FILL SLOPE. WHEN USED WITH A CUT SLOPE A 4:1 OR FLATTER CUT IS REQUIRED IN THE RECOVERY AREA.
6. RECOVERY AREA 20 FEET X 75 FEET MINIMUM. MAY NEED TO BE GREATER TO MEET AASHTO CLEAR ZONE REQUIREMENTS FROM THE EDGE OF TRAVEL LANE.
7. CLEAR RECOVERY AND APPROACH AREAS OF ANY FIXED OBJECTS.
8. USE GUARDRAIL TRANSITION, STD DWG BA 4A, WHEN ATTACHING SYSTEM TO CONCRETE BARRIER OR BRIDGE PARAPET.
9. INSTALL REQUIRED MARKINGS AS PER STD DWG CC 1.
10. REFER TO THE GUIDELINES FOR CRASH CUSHIONS FOR SPECIFIC SYSTEM INFORMATION.

REVISIONS

NO.	DATE	APPR.	REMARKS
1	10/16/02	F.W.	CORRECTED STD. DWG. CALLOUT FROM BA 2B TO BA 4A IN NOTE 6.
2	01/29/03	G.S.	REVISED DRAWINGS, MAKING TWO DRAWINGS AND REVISED ALL NOTES

UTAH DEPARTMENT OF TRANSPORTATION
STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION
SALT LAKE CITY, UTAH

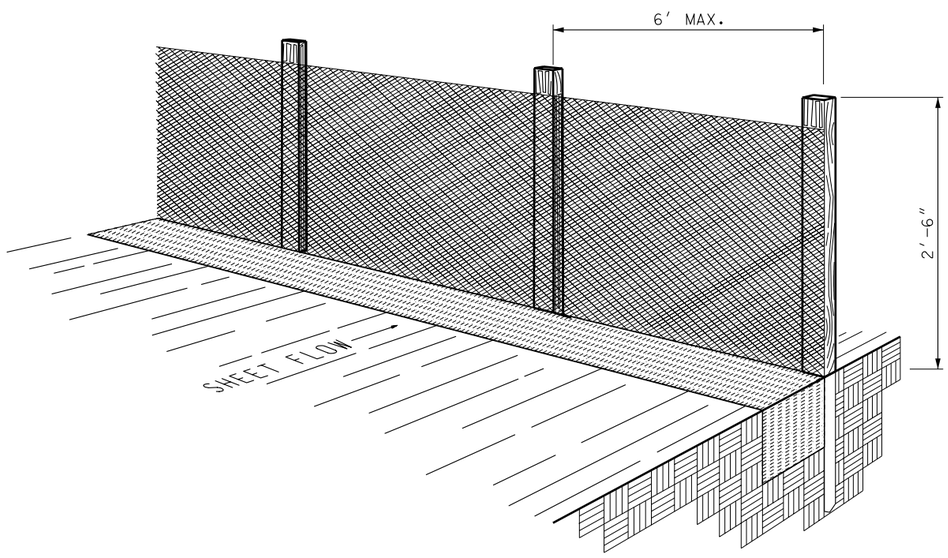
RECOMMENDED FOR APPROVAL — APR.24,2003 DATE
CHAIRMAN STANDARDS COMMITTEE APPROVED — APR.24,2003 DATE
DEPUTY DIRECTOR

GRADING & INSTALLATION DETAILS CRASH CUSHION TYPE H
STANDARD DRAWING TITLE

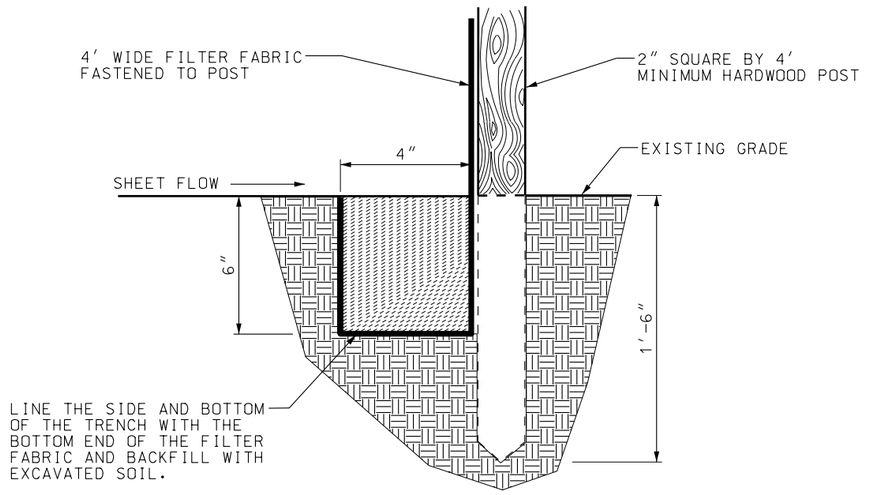
STD DWG
CC 9B

02-JUN-2003 DGN File:N:\Eng\Standard Drawings\Imperial\Approved\Change3Approved\CC09B.dgn

SILT FENCE



PERSPECTIVE VIEW



SECTION

NOTES:

1. WHERE POSSIBLE, LAYOUT THE SILT FENCE 5′ TO 10′ BEYOND THE TOE OF SLOPE.
2. ALIGN THE FENCE ALONG THE CONTOUR AS CLOSE AS POSSIBLE.
3. WHEN EXCAVATING THE TRENCH, USE MACHINERY THAT WILL PRODUCE NO MORE THAN THE DESIRED DIMENSIONS.
4. EXTEND THE BOTTOM 1′- 4″ OF FILTER FABRIC TO LINE ALL THREE SIDES OF THE TRENCH.
5. TO AVOID EXCESSIVE PONDING OF WATER AT LOW POINTS ALONG THE FENCE, PROVIDE AN OPENING IN THE SILT FENCE AND INSTALL A CHECK DAM.
6. AVOID USING JOINTS ALONG THE FENCE AS MUCH AS POSSIBLE. IF A JOINT IS NECESSARY, SPLICE THE FILTER FABRIC AT A POST WITH 6″ OVERLAPS AND SECURELY FASTEN BOTH ENDS TO THE POST.
7. MAINTAIN A PROPERLY FUNCTIONING SILT FENCE THROUGHOUT THE DURATION OF THE PROJECT OR UNTIL DISTURBED AREAS HAVE BEEN VEGETATED.
8. REMOVE SEDIMENT AS IT ACCUMULATES AND PLACE IT IN A STABLE AREA APPROVED BY THE ENGINEER.

REVISIONS

NO.	DATE	APPR.	REMARKS
1	04/24/03	F.W.	CORRECT POST SPACING IN PERSPECTIVE VIEW

UTAH DEPARTMENT OF TRANSPORTATION
STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION
SALT LAKE CITY, UTAH

RECOMMENDED FOR APPROVAL — APRIL 24,2003 DATE

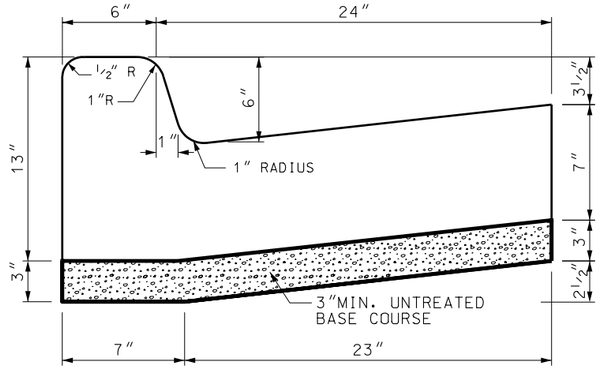
CHAIRMAN STANDARDS COMMITTEE
APPROVED — APRIL 24,2003 DATE

DEPUTY DIRECTOR

STANDARD DRAWING TITLE
TEMPORARY
EROSION CONTROL
(SILT FENCE)

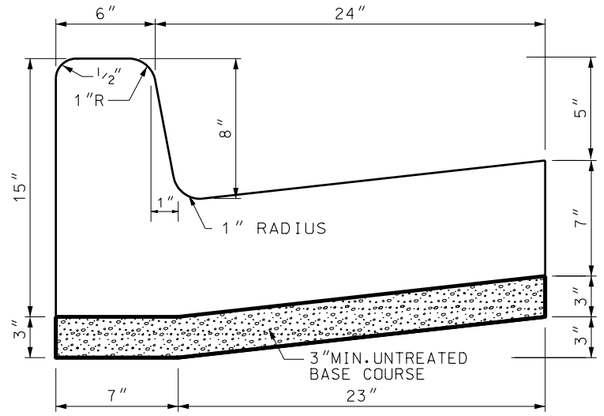
STD DWG
EN 2

DGN File: N:\Esd\Standard_Drawings\Imperial\Approved\Change2Approved\EN02.dgn
02-JUN-2003



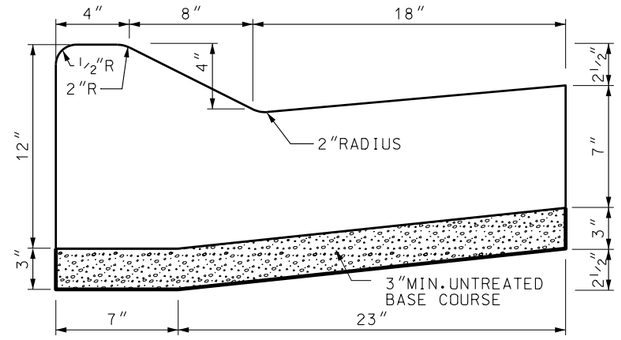
TYPE B1

CURB & GUTTER
AREA = 1.680 SQ.FT.



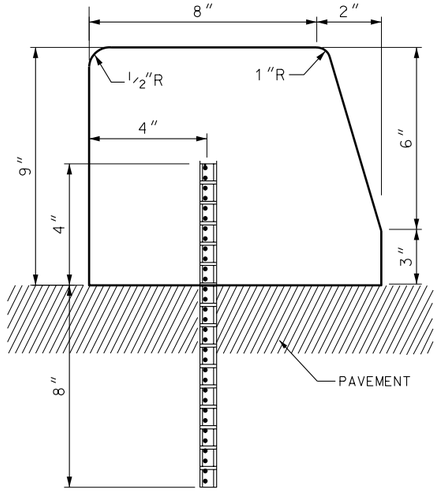
TYPE B2

CURB & GUTTER
AREA = 1.765 SQ.FT.



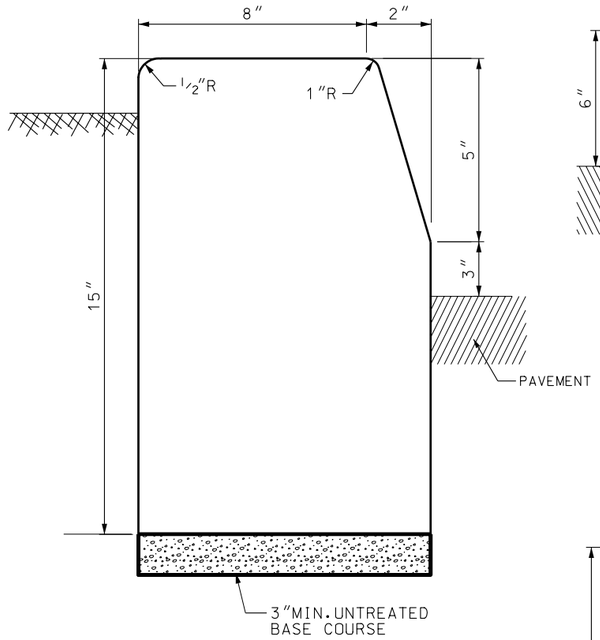
TYPE M1

CURB & GUTTER
AREA = 1.700 SQ.FT.



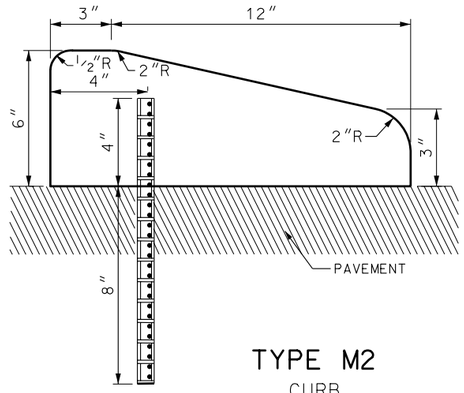
TYPE B3

CURB
AREA = 0.580 SQ.FT.



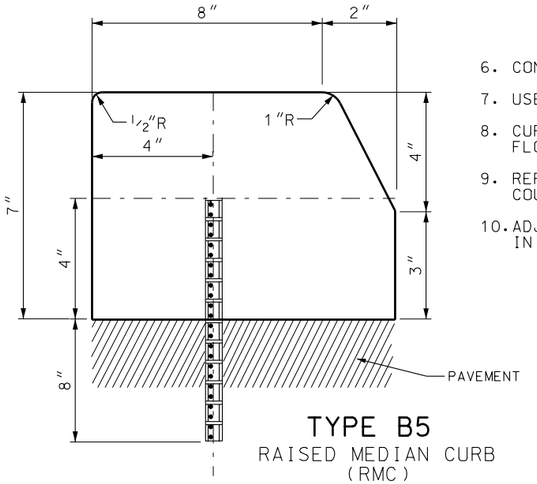
TYPE B4

CURB
AREA = 1.033 SQ.FT.



TYPE M2

CURB
AREA = 0.484 SQ.FT.



TYPE B5

RAISED MEDIAN CURB
(RMC)
AREA = 0.490 SQ.FT.

NOTES:

1. DRAINAGE CURBS: TYPE B1,B2 & M1
2. MOUNTABLE CURBS: TYPES M1 & M2 FOR APPLICATION REFER TO THE AASHTO POLICY ON GEOMETRIC DESIGN OF HIGHWAYS AND STREETS.
3. BARRIER CURBS TYPES B1, B2, B3, B4 & B5 USED WITH DESIGN SPEED UP TO 40 MPH EXCEPT IN PREDOMINATELY URBAN OR RAPIDLY DEVELOPING RURAL AREAS WHERE BARRIER CURB MAY BE USED WITH DESIGN SPEEDS UP TO 50 MPH.
4. DOWELS: ¾″ DEFORMED BARS ON 5′ MAX.CENTERS.
5. PRECAST CURBS:
   A. MINIMUM OF 10′ IN LENGTH.
   B. DOWELS AT A MINIMUM OF 3 PER 10′ LENGTH.
   C. INCLUDE ADEQUATE REINFORCING STEEL TO WITH STAND HANDLING STRESSES.
6. CONCRETE CLASS AA "AE"
7. USE TYPE B4 ONLY AS BORDER CURB.
8. CURB HEIGHT IS MEASURED VERTICALLY FROM THE FLOW LINE OF THE GUTTER TO TOP BACK OF CURB.
9. REFER TO ROADWAY PLANS FOR UNTREATED BASE COURSE SIZE.
10. ADJUST CURB FACE TO 4″MAXIMUM HEIGHT WHEN USED IN CONJUNCTION WITH GUARDRAIL BARRIER.

REVISIONS

NO.	DATE	APPR.	REMARKS
1	02/20/03	J.L.	REVISED NOTE 2, ADDED PAVEMENT LEADER TO TYPE B2, B3, AND B5.
2	04/24/03	J.L.	ADDED NOTE 10

UTAH DEPARTMENT OF TRANSPORTATION
STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION
SALT LAKE CITY, UTAH

RECOMMENDED FOR APPROVAL — APR.24.2003 DATE

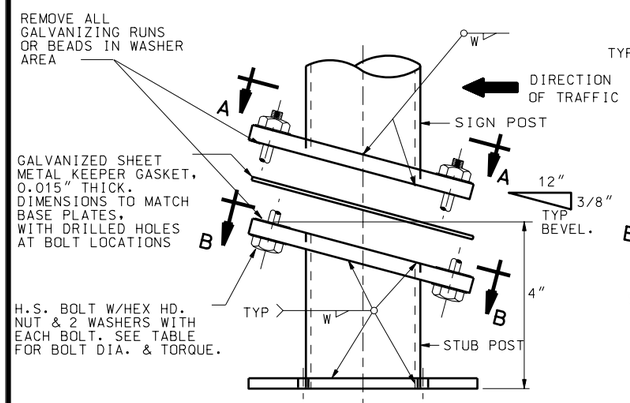
CHAIRMAN STANDARDS COMMITTEE APPROVED — APR.24.2003 DATE

DEPUTY DIRECTOR

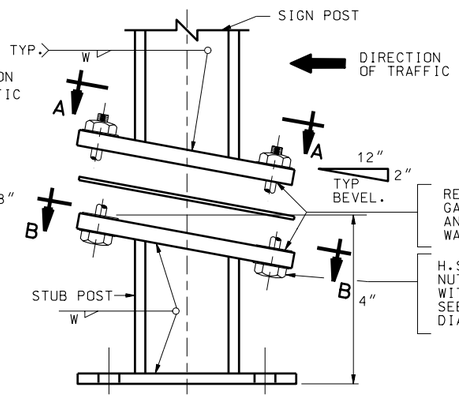
STANDARD DRAWING TITLE
CONCRETE
CURB & GUTTER

STD DWG
GW 2

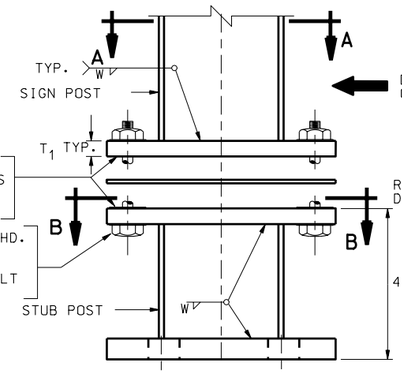
DGN File: N:\Eval\Standard Drawings\Imperial\Approved\Change 24\Approved\GW02.dgn
02-JUN-2003



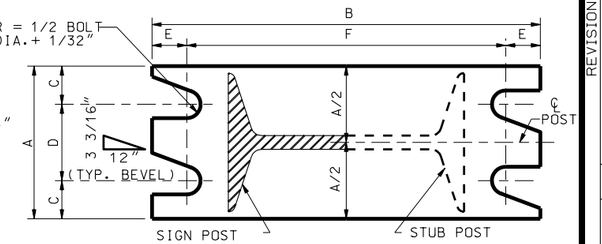
SIGN POST & STUB POST ELEVATION
(FOR PIPE COLUMNS)



SIGN POST & STUB POST ELEVATION
(FOR S3 & S4 SECTIONS)



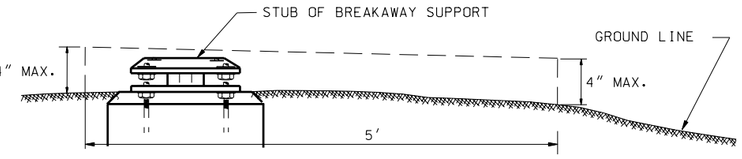
SIGN POST & STUB POST ELEVATION
(FOR S6, S8 & W10 SECTIONS)



SECTION A-A SECTION B-B
(SEE TABLE FOR DIMENSIONS)

SECTIONS SHOWN ARE FOR INSTALLATIONS ON RIGHT SHOULDER AND IN GORE. PLATE SLOT BEVELS ARE OPPOSITE HAND FROM THAT SHOWN FOR INSTALLATION ON LEFT SHOULDER "S" POST IS SHOWN. PIPE POST SELECTIONS ARE SIMILAR.

BASE CONNECTION DATA TABLE										FUSE PLATE DATA TABLE									
POST SIZE	BOLT SIZE & TORQUE	A	B	C	D	E	F	T_1	W	F	G	H	J	K	L	N	T_2	D_1	BOLT DIA.
S3 X 5.7	1/2" DIA.X 2 1/2" 10 FT.-LB. TORQUE	3"	7 1/2"	3/4"	1 1/2"	3/4"	6"	5/8"	3/16"	3 7/16"	2 1/4"	1 1/8"	2 3/8"	1 1/2"	7/16"	1/2"	1/4"	9/16"	1/2"
S4 X 9.5		3 1/2"	7 1/2"	3/4"	2"	3/4"	6"	5/8"	1/4"	3 7/16"	2 1/4"	1 1/8"	2 3/4"	1 1/2"	5/8"	1/2"	5/16"	9/16"	1/2"
S6 X 12.5	5/8" DIA. X 3" 24 FT.-LB. TORQUE	4 1/2"	10"	1 1/8"	2 1/4"	3/4"	8 1/2"	3/4"	5/16"	4 3/8"	2 1/2"	1 1/4"	3 3/8"	2"	11/16"	5/8"	3/8"	9/16"	1/2"
S6 X 17.5		4 1/2"	10"	1 1/8"	2 1/4"	3/4"	8 1/2"	3/4"	5/16"	4 3/8"	2 1/2"	1 1/4"	3 5/8"	2"	13/16"	5/8"	3/8"	11/16"	5/8"
S8 X 18.4		5"	12"	1 1/8"	2 3/4"	3/4"	10 1/2"	3/4"	5/16"	4 3/8"	2 1/2"	1 1/4"	4"	2 1/4"	7/8"	5/8"	7/16"	13/16"	3/4"
W10 X 19.0	3/4" DIA.X 3 1/2" 38 FT.-LB. TORQUE	6"	1'-2 1/2"	1 1/4"	3 1/2"	7/8"	1'-0 3/4"	1"	5/16"	6"	3"	1 1/2"	4"	2 1/4"	7/8"	3/4"	3/8"	15/16"	3/4"
W10 X 22.0		7"	1'-3"	1 1/2"	4"	7/8"	1'-1 1/4"	1"	5/16"	6"	3"	1 1/2"	5 3/4"	3 3/4"	1"	7/8"	3/8"	15/16"	7/8"
W10 X 26.0		7"	1'-3"	1 1/2"	4"	7/8"	1'-1 1/4"	1"	5/16"	6"	3"	1 1/2"	5 3/4"	3 3/4"	1"	7/8"	7/16"	15/16"	7/8"
W10 X 30.0	1" DIA.X 3 1/2" 51 FT.-LB. TORQUE	7"	1'-3"	1 1/2"	4"	7/8"	1' 1 1/4"	1 1/8"	5/16"	6"	3"	1 1/2"	5 3/4"	3 3/4"	1"	7/8"	1/2"	15/16"	7/8"
3" DIA. STD. PIPE	1/2" DIA.X 2 1/2" 10 FT.-LB. TORQUE	4 1/2"	7 1/2"	1"	2 1/2"	3/4"	6"	3/4"	1/4"	NO FUSE PLATE REQUIRED ON PIPE COLUMN									
4" DIA. STD. PIPE		5 1/2"	8 1/2"	1"	3 1/2"	3/4"	7"	3/4"	1/4"										
5" DIA. STD. PIPE	5/8" DIA.X 3 1/2" 24 FT.-LB. TORQUE	6 1/2"	10 1/4"	1 1/4"	4"	7/8"	8 1/2"	1"	1/4"										
6" DIA. STD. PIPE		7 1/2"	11 1/2"	1 1/4"	5"	7/8"	9 3/4"	1"	5/16"										
8" DIA. STD. PIPE		9 1/2"	1'-2"	1 1/4"	7"	7/8"	1'-0 1/4"	1"	5/16"										

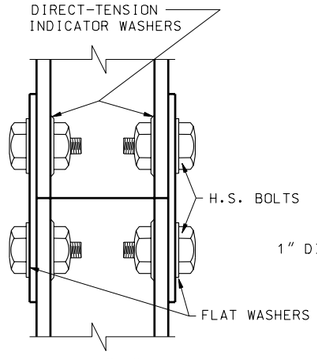


PLACE SIGN SUPPORT FOUNDATION SO IMPACTING VEHICLES DO NOT SNAG ON EITHER FOUNDATION OR ANY SUBSTANTIAL REMAINS OF SIGN SUPPORT. GRADE SURROUNDING TERRAIN TO PERMIT IMPACTING VEHICLES TO PASS OVER FOUNDATION AND PORTIONS OF SIGN SUPPORTS WHICH REMAIN IN THE GROUND OR ARE RIGIDLY ATTACHED TO THE FOUNDATION.

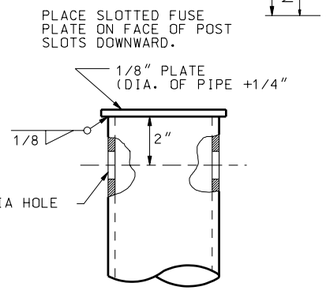
BREAKAWAY SUPPORT STUB HEIGHT MEASUREMENT

NOTES:

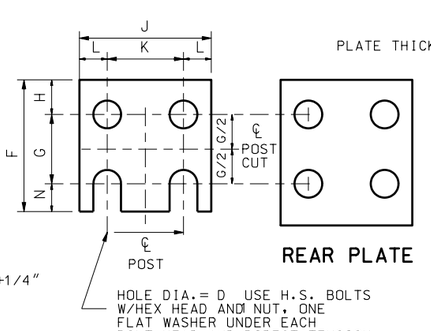
1. CONFORM TO THE LATEST EDITION OF AASHTO STANDARD SPECIFICATION FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS.
2. FABRICATE BASE, SLIP AND FUSE PLATES FROM STEEL MEETING THE REQUIREMENTS SPECIFIED FOR THE SIGN POST TO WHICH THEY ARE ATTACHED EXCEPT WHERE PIPE POST ARE USED. IN WHICH CASE CONFORM TO THE REQUIREMENTS OF ASTM A 36.
3. USE STRUCTURAL STEEL THAT IS STRUCTURAL CARBON STEEL CONFORMING TO THE FOLLOWING ASTM DESIGNATIONS: STANDARD PIPE 3"-8" DIA. ASTM A 53 GRADE B. W AND S SHAPES ASTM A 36.
4. USE BOLTS, NUTS AND WASHERS CONFORMING TO ASTM A 325 AND CADMIUM ELECTRO PLATING CONFORMING TO ASTM A 165 NS.
5. WELD TO THE REQUIREMENTS OF THE AASHTO STANDARD SPECIFICATION FOR WELDING OF STRUCTURAL STEEL HIGHWAY BRIDGES.
6. SAW CUTTING ALL PLATE CUTS IS PREFERRED. FLAME CUTTING WILL BE PERMITTED PROVIDED ALL EDGES ARE GROUND. METAL PROJECTING BEYOND THE PLATE FACE WILL NOT BE TOLERATED.
7. GALVANIZE ALL STRUCTURAL STEEL AFTER FABRICATION IN CONFORMANCE TO AASHTO M 111 (ASTM A 123).
8. TIGHTEN HIGH STRENGTH BOLTS IN THE BASE CONNECTION ONLY TO THE TORQUE LIMITS SHOWN IN THE TABLE. DO NOT OVER TIGHTEN.
9. TIGHTEN ALL HIGH STRENGTH FRICTION FUSE BOLTS IN THE SHOP. USE DIRECT- TENSION INDICATOR WASHERS TO TIGHTEN THE BOLTS. SEE STANDARD SPECIFICATION SECTION 05120 ARTICLE 3.2 PARAGRAPH C.
10. MOUNT ALL SIGNS DESIGNATED FOR MOUNTING WITH BREAKAWAY BASES ON UNDIVIDED HIGHWAYS OR ON DIVIDED HIGHWAYS OF LESS THAN FOUR LANES WITH BREAKAWAYS PLATES PARALLEL TO THE BASE PLATES.



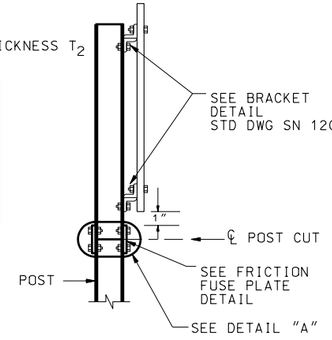
DETAIL "A" HINGE



TOP OF PIPE DETAIL



FACE PLATE



REAR PLATE

SIDE VIEW

FUSE PLATE DETAIL
(SEE TABLE FOR DIMENSIONS)

REVISIONS				
NO.	DATE	APPR.		REMARKS
1	04/24/03	F.W.	FUSE PLATE DETAIL-SIDE VIEW CORRECTED	
			STANDARD DRAWING CALLOUT	

UTAH DEPARTMENT OF TRANSPORTATION
STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION
SALT LAKE CITY, UTAH

RECOMMENDED FOR APPROVAL — APRIL 24,2003 DATE
CHAIRMAN STANDARDS COMMITTEE APPROVED — APRIL 24,2003 DATE
DEPUTY DIRECTOR

GROUND MOUNTED SIGN INSTALLATION DETAILS
STANDARD DRAWING TITLE

STD DWG
SN 12B

DGN File: N:\Esd\Standard Drawings\Imperial\Approved\Change3\Approved\SN12B.dgn
02-JUN-2003